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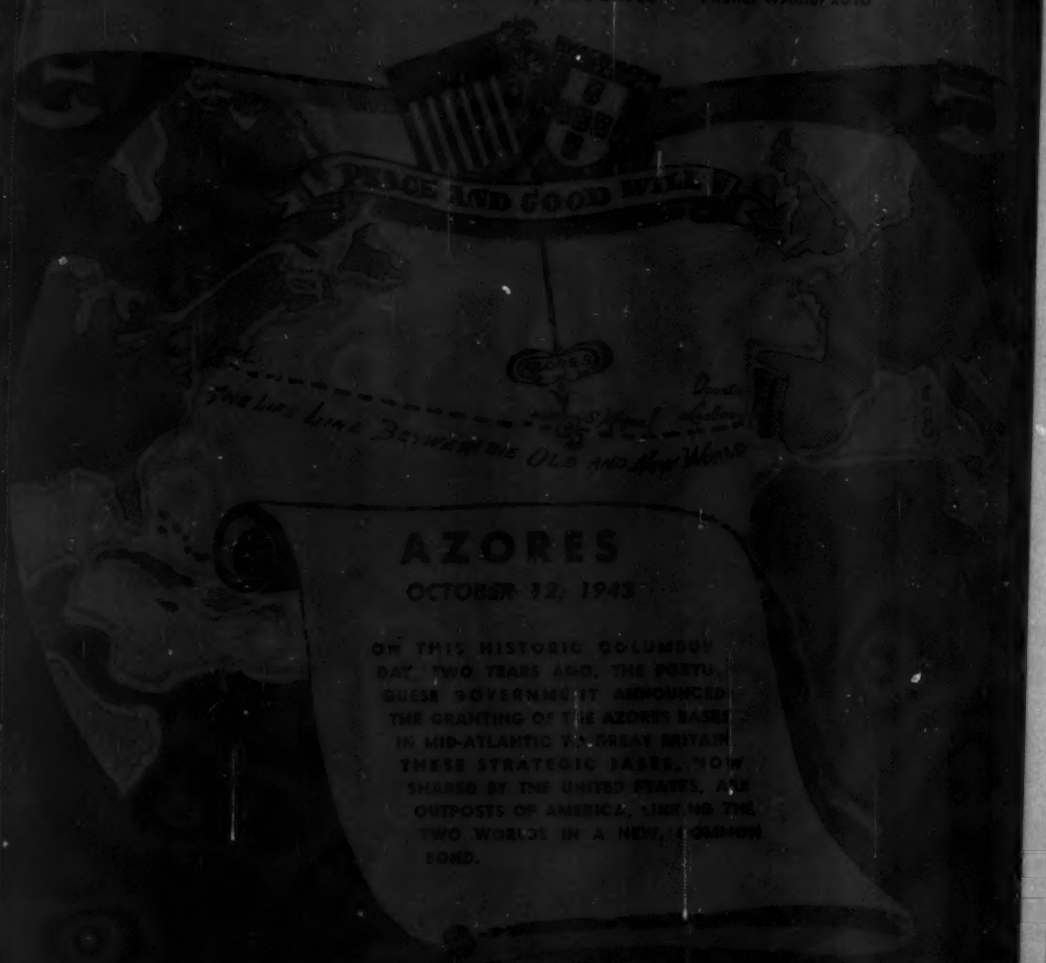
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JOHN F. BUDD, *Editor and Publisher*

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Beech Aircraft

By R. H. AYRE

CANADA doesn't go around with thumbs in braces and chest out, and a smile on its face like the cat that got the cream; its people are proud of the honor, but they think it's no more than normal that their country should have been chosen as headquarters for the International Civil Aviation Organization.

"We feel that it is merited by geography," said C. D. Howe, the Minister in the Canadian Government charged with the development of civil aviation, when he welcomed the delegates to the Provisional Organization meeting in Montreal in August.

"Our geographical position is such that it is inevitable that Canada occupy an important place among the nations of the world. The short international routes between the centers of population of the Northern Hemisphere, almost without exception, pass over Canadian territory. Placed as we are between Europe and Asia, we are strategically situated in respect to the world's airways, and as the emergencies of the war recede, the Dominion, and the headquarters of the Council, will be readily accessible by air from all parts of the world."

Geography is one thing. Machinery is another. Next to the United States, Canada is the largest operator of domestic air services in the world, equipped, from Atlantic to Pacific and into the far North, with modern airports and landing fields and navigational aids. Trans-Canada Air Lines alone, operating over 5,299 miles of routes from Newfoundland to Vancouver Island, to New York, and to Windsor—across the street from Detroit—and north to Edmonton, flies something like 10 million miles a year, maintains an all-the-year-round service across the North Atlantic to Britain, and has plans looking toward Alaska and the Pacific, the West Indies, and South America.

Another thing is point of view and intention. As far back as two-and-a-half years ago. the Canadian Prime Minister was saying:

"The Canadian Government strongly favors a policy of international collaboration and cooperation in air transport and is prepared to support in international negotiations whatever international air transport policy can be demonstrated as being best calculated to serve not only the immediate national interests of Canada but also our overriding interest in the establishment of an international order which will prevent the outbreak of another war."

Yes, Canada is air-minded, and Canada is world-air-minded.

Your neighbor's interest in aviation goes back to the balloons of the Seventies, when the Wright brothers were unfledged youngsters. Even in those days, Canadians had an eye on the future. Following the balloon experimentalists, the pioneer in aeronautical research in Canada was W. R. Turnbull, who constructed a wind tunnel in 1902. Aviation owes him much, and one of the greatest of his contributions was the controllable pitch propeller.

For some years, Dr. Alexander Graham Bell, the Canadian who invented the telephone, had been experimenting with kites and airscrews at his summer home near Baddeck, Nova Scotia. In 1907, he formed the Aerial Experiment Association, consisting of himself; Glen Curtiss, who was then building motorcycle engines at Hammondsport, New York; Lieutenant Selfridge of the United States Army (later killed flying with Wright near Washington); and F. W. Baldwin and J. A. D. McCurdy, graduates in practical science of the University of Toronto.

McCurdy had played in Bell's laboratory as a child, growing up to help the inventor in his work, and when he graduated he naturally wanted to carry on with the new science which so fascinated him. He brought Baldwin, a fellow student, to Baddeck. The enterprise was financed, with a working capital of $35,000, by Mrs. Bell.

It was in December, 1907, that the first recorded flight in Canada by a heavier-than-air machine carrying a passenger was made. The machine was a tetrahedral kite called the *Cygnet*, and a steam tug provided the power. The passenger was Lieutenant Selfridge. Taking off from Bras d'Or Lake he reached an altitude of 170 feet.

Bell continued his experiments with kites, and the other members of the association designed gliders with motors. Their first airplane, built at the Curtiss factory, was flown over Lake Keuka, New York, in March, 1908. It was equipped with skis. The pilot was Baldwin and he was the first British subject to fly. Baldwin's *Red Wing* flew successfully in May, and later in the season Curtiss, in his *June Bug*, won the Scientific-American trophy for the first heavier-than-air machine to fly one kilometer.

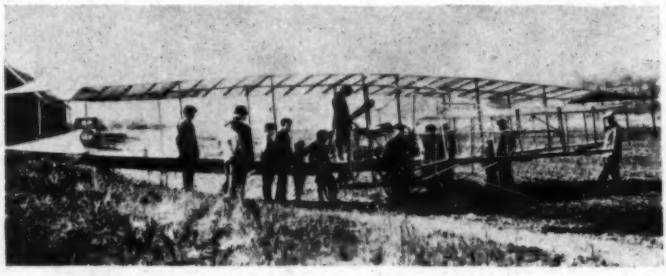
With his long beard blowing in the winter wind, Dr. Bell stood on the ice of Baddeck Bay on February 23, 1909, and watched McCurdy take his *Silver Dart* 30 feet into the air and fly it half a mile at 40 miles an hour. This was the first flight of a flying machine in Canada—some say in the British Empire—and aviation in the Dominion was well on its way. A few days later, McCurdy covered eight miles in 11 minutes and 15 seconds. The *Silver Dart* was recognized as an advance on any aircraft previously flown. Its three-wheel undercarriage and its tapered wings were notable features, but even more important was the use of control by ailerons.

The association was dissolved at the end of March, but McCurdy and Baldwin carried on their activities and others began coming to the front. A flying meet was held in Montreal in 1910 and Jacques de Lesseps flew at Montreal and Toronto in his Bleriot monoplane; an airplane was built and flown on the Pacific Coast in the same year.

McCurdy flew from Key West, Florida, to Cuba in 1911. This was the longest overseas flight up to that time, and it was not to be repeated until 1928 when Lindbergh opened the air mail service between Florida and Cuba.

We'll skip the developments within the next few years, when aircraft went on improving, and flying, from an experiment and an adventure, began growing into a science.

Trans-Canada Air Lines, Canada's national air service, did not arrive for nearly 30 years after the *Silver Dart* flew at Baddeck, but there was a good deal going on in the air in those three decades. Canadian airmen made an illustrious name for themselves and their country in the First World War, although



NEARLY FOUR DECADES AGO—The Silver Dart about to warm up her tiny engine before taking off on the first flight of a flying machine in Canada.

FUR BY AIR—Baled fur, air-shipped by the famed Hudson's Bay Company, being loaded into cargoplane at Ogoki Post, in Northern Ontario, for swift transportation to southern markets.

there was no Canadian Air Force and their exploits were as individuals in the British services. They were bitten by the bug and many of those who came home after 1918 decided to make a career of aviation.

Some of them went into exhibition flying, joy-riding, and teaching; but in time the airmen found other outlets for their ambitions. As early as 1915, Dr. Charles Camsell, Deputy Minister of Mines and Resources, was asking about flying boats to make things easier for scientists working in the far North. This use of aircraft in exploration did not come for a few years because Canada was up to its neck in war; but the armistice was scarcely signed when Canada began pioneering in forestry surveys and fire protection from the sky in aerial photography and mapping.

Forestry patrols began in Quebec in 1919 and the idea rapidly spread to other provinces. Canadians began to realize the value of wings in reaching the outposts of their vast northern wilderness. When crude oil was discovered at Fort Norman in the North West Territories in 1921, the Imperial Oil Company bought two Junkers planes to facilitate communication.

"The story of this pioneer effort is an epitome of the difficulties overcome in later years by hard work and careful planning," as J. A. Wilson, director of Air Services, Department of Transport, and a director of TCA, has pointed out in an historical survey. "Intense cold, Arctic blizzards, rough landings in unknown country, inadequate supplies and unsuitable equipment all were mastered by hard work and indomitable perseverance. A new propeller was built on one occasion at a Hudson Bay post from oak sleigh boards and glue made on the spot from moose hide."

The use of air transport in the North became firmly established. Many rich mining centers far from road and railway and accessible only by canoe in summer and dogsled in winter owe their existence and development to the airplane. One interesting, and even romantic, use of aircraft, in 1924-26, was the spotting of seal herds by flying boat for the Newfoundland sealing fleet.

The first passenger and freight service in Canada was established in the Rouyn mining area of Quebec in 1924. Flying boats, fitted in winter with skis, carried 1,000 passengers, 78,000 pounds of freight, and 15,000 letters and telegrams in the first six months.

Canada went into the air freight business in a big way. (*See Air Transportation, January, 1943.*) For years, flying in Canada was "bush flying"—and bush flying put Canada into the front rank of world aviation. For years, the Dominion carried more freight by air than any other country—more than some of the greatest, most advanced countries combined. It was exceeded only by the Soviet Union. In one year—1938, for example—air freight in Canada totaled 27 million pounds.

They were studying intercity air mail service in 1920, but the time wasn't ripe. It took 10 years. In the meantime, mail services to outlying communities were rapidly developing. There was scarcely a city of any size that

wasn't air-minded and that didn't have a flying club. The result of the enthusiasm and activity was that when the Government began its airway survey in 1928, it found many airports and landing fields already established or in the process of formation.

Without waiting to complete installations in northern Ontario and in the Rockies, the Government went ahead in the easier terrain of the prairies, leasing and improving properties for intermediate landing fields, installing lighting, radio and meteorological services. In 1930, a nightly air mail service went into effect between Winnipeg and Edmonton, by way of Calgary, and later by Lethbridge and Calgary. At the same time, daily air mail service was established from Moncton, New Brunswick, to Montreal, Kingston, Toronto, Hamilton, Brantford, London, Windsor, and Detroit. Arrangements were made with the United States air mail service for the carriage of mails between Detroit and Pembina, south of Winnipeg. This was scarcely a direct route, but it did connect Moncton and Edmonton by air.

The intercity mail service was discontinued in the spring of 1932 owing to the depression, but it would have been poor economy not to maintain the sections of the airway which had been completed. The airway was not neglected, the surveys through the mountains were carried on, and in 1933 construction was begun in British Columbia, Ontario, Quebec and the Maritime Provinces to provide employment for thousands of single, homeless men.

With the completion of the airway, or the better part of it, the time had come for the organization of Trans-Canada Air Lines. TCA grew out of the need for a swift, modern system of transportation between communities scattered across an area of more than 3,000 miles, out of a vision for a more closely integrated nation and a nation playing an increasingly important part in the affairs of the world.

Canada's national air service was incorporated by Act of Parliament in April, 1937. Three of its directors were nominated by the Government and four by the Canadian National Railway Company, which is the sole stockholder. While TCA operates its own show, Canadian National Railways lends assistance. The airline's secretary, treasurer, comptroller, chief counsel, director of public relations, chief architect, express services general manager, and chief medical officer, for instance, belong to CNR.

The president of TCA is H. J. Symington, C.M.G., K.C.; and the other members of the board of directors elected by the shareholders are: Wilfrid Gagnon, C.B.E., and J. A. Northey, directors; and R. C. Vaughan, chairman and president, Canadian National Railways. Directors appointed by the Governor-in-Council (Government) are: C. P. Edwards, O.B.E., Deputy Minister of Transport; J. A. Wilson, director of Air Services, Department of Transport; and George Herring, chief superintendent of Air and Land Mail Services, Post Office Department.

TCA's first operations vice-president was the late Philip G. Johnson, called to Canada because of his wide experience in large-scale transcontinental flying operations. He brought with him other Americans of outstanding ability, such as D. B. Colyer and O. T. Larson, both of whom succeeded him in the office of vice-president. Today the position is held by William F. English, whose transportation career began with the Canadian National, and nearly all the executives are Canadians, many of whom began as pilots.

TCA started in a small way, with an operation over a route 122 miles long between Vancouver and Seattle, a few months after its incorporation. It took over an existing airline. This service was discontinued in 1941. A limited air mail and express service went into effect between Montreal and Toronto and Vancouver, and between Lethbridge and Edmonton, in 1938, while TCA carried on its

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WELL DONE, LADS—President H. J. Symington of TCA presenting a coffee urn to three airline pilots who have made more than 100 Montreal - Prestwick flights. Left to right are Symington, Harold F. Thomas, George B. Lothian, and Alan J. Blackwood.

organization and training program, established an engineering and maintenance center at Winnipeg and began building hangars. In the spring of 1939, regular mail, express and passenger service began between Montreal, Toronto and the Pacific Coast, and the air line reached out to Moncton. Regular service to this New Brunswick city was operating early in 1940. Toronto, London and Windsor were linked by air in that year, a second daily flight went into effect on the transcontinental route and another daily trip was added between Montreal, Ottawa and Toronto. Halifax and New York came into the picture in 1941 and Sydney, Nova Scotia and Newfoundland in 1942. Victoria, British Columbia, was added in 1943 and it was in that year that TCA began flying the Atlantic.

In 1944 Trans-Canada carried nearly four million pounds of mail, more than 800,000 pounds of express and nearly 157,000 passengers. During the war in Europe, TCA flew 44 million miles, transporting more than 602,000 passengers, 13,500,000 pounds of mail, and 2,500,000 pounds of express.

TCA was just beginning to get into its stride when the Dominion entered the war and the airline assumed a new importance. Planned to assist in the integration of communities scattered across 3,000 miles, to help build up a nation of peace, it became a powerful instrument of war on the home front. Handicapped by shortage of manpower and materials, it went on with its development as a swift, efficient transportation machine, maintaining the highest standards of service to the public, improving and increasing its schedules, planning for its expansion when the war was ended.

Besides providing speedy mail, express and passenger service, which was of strategic importance during the war, TCA fought on the home front in many other ways. Its ground crews overhauled and maintained military aircraft and their instruments and accessories for the Royan Canadian Air Force, the Royal Air Force, the British Commonwealth Air Training Plan, and the transports operated across the Atlantic by the British Overseas Airways Corporation. It assisted in important aeronautical experiments by the National Research Council.

At one time, during the war, women comprised 35 percent of the airline's staff. They were a credit to the company and to themselves, in the engineering shops, as radio operators, as cargo handlers and chauffeurs, as passenger agents and in many other capacities; but they are being gradually replaced by men released from military duty.

TCA was one of the first organizations in Canada to put into effect a rehabilitation policy. This began with the employment of Air Force personnel who had completed their tours of operations overseas and who were given special training to fit them for posts as TCA pilots. More than 500 men back home again from the war are now in TCA service, as pilots, radio operators, dispatchers, station and traffic agents and in other duties.

At Winnipeg, which is operations headquarters, and where is situated its engineering and maintenance base, one of the most modern in the world, Trans-Canada carries on regular schools for its personnel. Pilots, training to become first officers and then captains; radio and teletype operators, passenger agents and traffic representatives, stewardesses, shop forces and others all receive a thorough training before being assigned to duty. Thoroughness and accuracy are behind the regularity and speed of TCA schedules. Staffs are

trained; aircraft are serviced, checked and overhauled according to well-proved procedure; every flight is planned before the aircraft takes off, and the crews, flying the beam, keep in continuous contact with the ground.

Many TCA methods, the result of research and experiment, have been adopted by other airlines. Notable among these is the central reservations control at Toronto for the speedy handling of passenger bookings. TCA communications experts are to the forefront in electronic development and in the engineering shops many devices have been worked out which have been of benefit elsewhere. At Winnipeg, the airline is conducting experiments in the use of radar and is the first airline in the world to use this marvelous extension of human vision to improve the efficiency and safety of flight.

To its fleet of *Lodestars* and other Lockheed aircraft, Trans-Canada is now adding 10 Douglas DC-3s, refitted to meet the airline's standards and Canadian operating conditions.

In the Atlantic service, TCA crews fly Canadian-built *Lancasters*. The service designed to speed mails to and from the troops overseas, to carry war priority freight and passengers on urgent war business, began on July 22, 1943, and some 450 crossings have been made between Montreal and Prestwick, Scotland. They are usually made with a stop in Newfoundland, but many of the flights have been non-stop, and TCA holds the record for this route—10 hours, 15 minutes.

Projected developments for Trans-Canada, which has been designated by the Government as the airline to fly transcontinental and international routes, include shortening the cross-Canada line by flying over Lakes Huron and Superior from Toronto to Sault Ste. Marie and Port Arthur and thence to Winnipeg; a direct line from Winnipeg to Edmonton by way of Saskatoon; a route from Edmonton to Whitehorse in the Yukon and Fairbanks, Alaska; one from Victoria to Seattle; another from Port Arthur to Duluth; Toronto and Chicago, Toronto and Cleveland, Halifax and Boston are all to be connected by TCA. The Montreal-United Kingdom service will be expanded, and Trans-Canada is interested in South America, the West Indies, and the Pacific.

Trans-Canada Air Lines works, builds, and plans for Canada's part in the aviation world of tomorrow. At the British Commonwealth Conference in Montreal and at the World Conference in Chicago in 1944, the company participated directly within the framework of the Canadian delegations. Its president, Mr. Symington, took a prominent part in the discussions. He is president of the International Air Transport Association.

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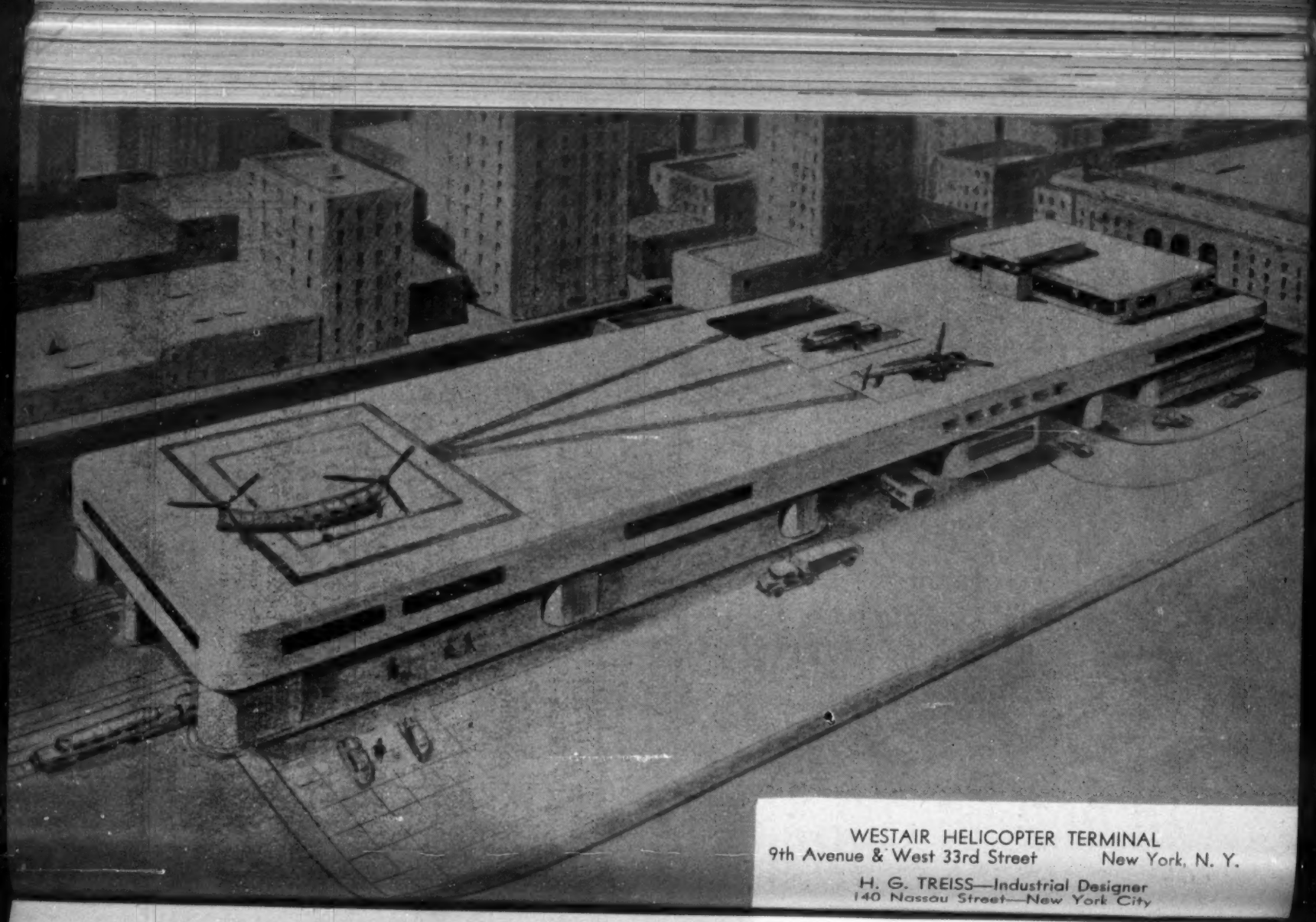
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Westair Helicopter Terminal

A Streamlined Plan by John F. Budd To Link Manhattan with Metropolitan Airports and to Bring All Air Mail To Within Feet of the Post Office

JOHN F. BUDD, who for years has been clamoring that air transportation begins in the city and terminates in the city, has popped up with a plan for a helicopter terminal for New York City, which would cut drastically the transportation time to and from the heart of the traffic-congested city and the airports in the metropolitan area, and also to bring all air mail to the very doorstep of the General Post Office.

Budd, who is publisher of AIR TRANSPORTATION and chairman of the Aviation Section, New York Board of Trade, made known the results of several years' work and research at a press conference in the Engineer's Club. His plan calls for the construction of a helicopter airport and terminal in the area directly behind the General Post Office, above the depressed railroad tracks leading into Pennsylvania Terminal.

Attending the conference were a number of America's ranking experts on rotary aircraft, including F. N. Piasecki, Commander A. J. Hesford, V. Roscoe Short, Commander William Maguire, and Lou Leavitt. E. Burke Wilford, who was unable to attend although he was instrumental in bringing together the helicopter men, wired a message of congratulation.

Westair Helicopter Terminal—tentatively called this because it would be located in West Side Manhattan—is relatively simple in design, taking full advantage of the geography and present facilities of the area.

A flight deck, not unlike that of an aircraft carrier, would form the roof of a three-story structure. Elevators have been provided for, bringing landed helicopters down to the bottom floor for servicing or parking. The second floor would contain a rotunda for passenger ticket sales, information desk, waiting room, restaurant, etc.

Taxis will be able to take on or discharge passengers indoors, thus relieving the congested streets. Trucks can load or unload air cargo within the structure itself. A wide observation and control tower, built at the east end of the flight deck, would face in the direction of the Hudson River and give a clear view of all incoming and outgoing flights.

Air mail delivery would be greatly benefited by Westair because not only would helicopter flight-time slash deeply into the present long surface trips to LaGuardia Airport, but also for the reason that the important airborne letters would land or take off within feet rather than miles of New York's General Post Office.

"New York needs a new and larger airlines terminal," said Budd. "Everyone knows that the present one is far from adequate. But why spend many millions for a new terminal which would continue to tie to the ground all traffic between the city and the airport? No matter how sumptuous or gigantic an affair it would be, an airlines terminal does not serve its primary purpose when it forces dependence upon surface traffic for the transportation of air passengers and freight to and from the airports surrounding the city. It must be borne in mind that as planes grow bigger and heavier, airports will be built farther from the city limits.

"The location of Westair is actually in the heart of New York City. It is in close proximity to hotel accommodations, great department stores, the entertainment centre, and various other forms of transportation for intra-city travel. It would be possible to make underground connections for pedestrians with the Pennsylvania Terminal and subways. In the event of non-flying weather, the Long Island Railroad is at hand for transportation to Idlewild, and the Hudson Tubes for transportation to Newark.

"At the present time approximately 16 trucks, carrying anywhere from 300 to 1,500 pounds of air mail each, make the trip each day between LaGuardia Airport and the Gen-

eral Post Office. Compare the mail truck trip whose fastest time is 45 minutes with a helicopter flight of nine minutes."

Budd recently pointed out at the Aviation Section celebration of transcontinental air mail's 25th anniversary, held last month at the Waldorf Astoria, that all air letters dropped in the mail boxes of the Bronx, Brooklyn, Richmond, and certain parts of Queens, are first trucked to the General Post Office in Manhattan and then transshipped to the airport. Much valuable time is lost in the surface transportation of air mail, even though a premium is spent for the rapid delivery of this form of communication.

"Helicopters do not need much area in which to land," said Budd, explaining that Westair would not require considerable space. "Although this statement should not be construed as a boost for one type of helicopter against another, I can state quite definitely that the world's biggest helicopter—the PV-3, in which I went up the other day—is able to land in a 100-foot diameter clearing.

"Of course, Westair can readily be increased in size by additional floors and/or extending down over the railroad tracks toward the Hudson River.

"Particular stress should be made upon the fact that Westair eliminates the necessity of any transportation across midtown Manhattan by the use of over-water routes or low-building areas. It is an important key to safe air transportation within the city."

Budd offered five routes to airports in the metropolitan area, using the 12-man commercial PV-3 cruising at 100 miles an hour, for computing flight-time from Westair.

TO LaGUARDIA AIRPORT—Up the Hudson River, over the Harlem River to Queens: 11.2 miles, 9 minutes.

TO IDLEWILD AIRPORT—Down the Hudson River, across New York Bay to Brooklyn, across to the airport: 18.9 miles, 13.7 minutes

TO NEWARK AIRPORT—Down the Hudson River, direct to Newark: 9.9 miles, 8.3 minutes.

TO WESTCHESTER AIRPORT — Up the Hudson River: 28.4 miles, 25 minutes.

TO MacARTHUR AIRPORT—Down the Hudson River, across New York Bay, straight to Islip, Long Island: 54.2 miles, 34.9 minutes.

Budd, who is responsible for the organization of the Aviation Section, New York's first civic body devoted to the promotion of civil aviation, has long worked toward bringing airport facilities into the city. He has spent more than two years surveying New York for possible sites and consulting with engineers. Several months ago his proposal for an air-rail-bus terminal with the helicopter landing strip, located over the Long Island Railroad depot at Atlantic and Flatbush Avenues, Brooklyn, won wide notice.

Westair's Designer

H. G. Treiss, brilliant young industrial designer, whose illustration of Westair Helicopter Terminal drew a storm of favorable comment, was educated at the Brooklyn Technical High School, Rensselaer Polytechnic Institute, Wayne University and Pratt Institute.

With a wide background in mechanical and industrial engineering, art and product design, and industrial illustration, he left New York in 1941 to take over the post of a technical adviser for Great Britain in connection with the lend-lease program. In this capacity

he traveled throughout the United States and Canada, facilitating the design and manufacture of tanks and mechanized transports.

With the termination of that engineering program, he became connected with General Motors where he was employed as a liaison engineer and designer in the development of experimental aircraft. Subsequent connections found him designing rotary aircraft in Consolidated-Vultee's development program, and presenting and expanding on some of his ideas for modern automobiles for William Stout. Returning to New York, he accepted a position as mechanical designer and chief industrial designer for a large engineering company.

"A year ago," he says, "I saw the need for an engineering and designing company, which would offer to industry a complete creative designing service combining the accurate and theoretical engineering business with the artistry of appearance designing."

Result: a flourishing business at 140 Nassau Street, New York, with a staff of engineers and designers to prove that he was right.

PENICILLIN

Largest Single Shipment ever made to Mexico

via BRANIFF INTERNATIONAL AIR EXPRESS

80,000 vials of penicillin were recently flown on one day, via Braniff, from the United States to Mexico. Now, penicillin shipments fill the cargo capacity of ten Braniff planes every month enroute to Mexico...another example of the "Hundred Million Dollar Market —right next door!"

Are you cultivating the Mexican markets for your product?

All The Way Without Delay

No-delay customs clearance procedures. Immediate return of C. O. D. Amounts. Simply call your local Railway Express Agency to pick up your shipment.

For Memorandum Tariff and Further Information, Write

BRANIFF AIRWAYS

General Traffic Office, Love Field, Dallas 9, Texas

The Czechs won't be Checked

By PROF. FERDINAND TREBICHAVSKY
Technological Institute, Bratislava, Czechoslovakia

UNTIL 1938 Czechoslovakia's position in civil aviation and in sports aviation was a very good one. There were several smoothly operating lines in daily operation. Being the heart of Europe, Prague formed a sort of intersection for the various planes, whether coming from Western Europe to the Eastern parts or from Northern to Southern European countries.

The aeronautical industry had also been developing very well since 1918. Motors manufactured by the Czechoslovak firm, Walter, were well reputed the world over. However, this was not the only factory producing airplanes. The Avia plant had an excellent reputation for its stunt planes with which Czechoslovak pilots gained prominence during international competitions. Some of the other well-known firms were Aero, Letov, Ceskomoravská, and Benes and Mráz.

The following is an enumeration of airlines and a short survey of the numerous aviation activities in Czechoslovakia in 1937; that is just prior to the war (April 1, 1937 to March 31, 1938).

In 1937 the following companies were executing regular air transport for passengers, mail, and baggage:

National Companies

1. Czechoslovak State Aero Lines (CSA)
2. Czechoslovak Air Company (CSL)

Foreign

3. Air France, Paris
4. Imperial Airways, Ltd., London
5. Deutsche Luft Hansa A.G., Berlin
6. KLM, The Hague
7. Oesterreichische Luftverkehrs A.G., Vienna
8. SABENA, Bruxelles
9. Ala Littoria, Rome
10. LARES, Bucharest
11. Aeroflot, U.S.S.R.

The entire length of the air network used by CSA was 6,929 kilometers (one kilometer = 3,280.8 feet), and in the aforementioned year it transported some 20,879 persons besides mail and baggage.

In the year 1937-38, CSL transported 13,481 persons as well as mail and baggage over some 3,212 kilometers.

Transport pl nes were mostly of Czechoslovak make (*e.g.*, the Fokker planes manufactured under license and the Aero 24). The next most popular planes used were the English machines Airspeed *Envoy* and the excellent Douglas DC-2 and DC-3.

Being an inland country, Czechoslovakia followed the motto, "The Air is our Sea," which worked as a powerful incentive in promoting air activity. Today, when the importance of aviation has been generally recognized, be it for war purposes or for peacetime transportation plans, Czechoslovakia has resolved to build up as extensive and as perfect an aviation system as can be achieved. Economic reasons are equally as potent in this resolve as are geographical ones, and both working in unison compel Czechoslovakia to exert all her efforts towards the rebuilding of transport aviation.

Czechoslovakia was among the leading export countries. In the future, business transactions will be sped up and facilitated with the aid of direct and quick air transportation.

CZECHOSLOVAK IMPORTS FROM UNITED STATES

Commodity	Value (thousands of dollars) 1937
Lard and bacon	315
Fruits and nuts	1,524
Tobacco, leaf	137
Leather	400
Cotton, unmanufactured	18,102
Wood and manufactures	336
Petroleum products	1,954
Phosphate rock	395
Iron and steel	2,604
Copper and alloys	4,029
Machinery	3,227
Automobiles	466
Turpentine and resins	797
Chemicals, medicines	706
Paints and varnishes	321
All others	3,765
TOTAL	39,078

The wealth and quality of Czechoslovakia's health baths and spas make the country one of the most important resort centers not only on the European continent. Their fame has spread throughout the Western hemisphere. Karlovy Vary or Carlsbad Marianske Lazne (Marienbad), Piestany, Trencianské Teplice, Sliac and the Tatra Mountains enjoy world fame. Visitors and invalids flocked to these spas from all over Europe and overseas. Many hundreds of thousands of such visitors, particularly those from overseas, will profit from direct airlines, when even from America an invalid will be able to reach his destination within 12 or 14 hours. Piestany is famed for its effective cures of rheumatism even in the seemingly hopeless cases.

All this induces Czechoslovakia to plan future airports in localities where direct intercontinental connections would easily be effectuated and such as would be suitable for landing even the larger and faster planes.

This is also why Czechoslovakia places such importance in the international Air Transport Conference in Montreal (PICAO) and why Czechoslovak experts and representatives readily take part in them.

At present the reorganization of aviation is being pursued with great intensity. Damage done to all transportation during the German occupation is now being repaired. It was great and the difficulties it involved cannot be minimized.

All military and transport planes, as well as those privately owned had been confiscated as early as 1939. In the ulterior phases of the war, when Czechoslovakia formed the actual European front line, airports were destroyed together with equipment and technical outfits, and all movable equipment was stolen. Czechoslovakia will have to buy a great deal of such material thus lost, especially modern planes as well as technical equipment.

America's industry, being at its height in this respect, will be the natural source for our requirements. Czechoslovakia will endeavor to buy the needs of our civilian aviation from the United States. The fact that now at the end of the war America is disposing of a great stock of these facilities, will, so Czechoslovakia anticipates, facilitate our efforts to re-equip our airports and replenish airports of transport planes.

We hope and work towards the goal to make Czechoslovakia really the heart of European aviation, having thus been designated because of its geographic position. After the great destruction of the last year of war, it will be a tremendous job—but there is determination to have it done and to have it done quickly and well.

CZECHOSLOVAK EXPORTS TO UNITED STATES

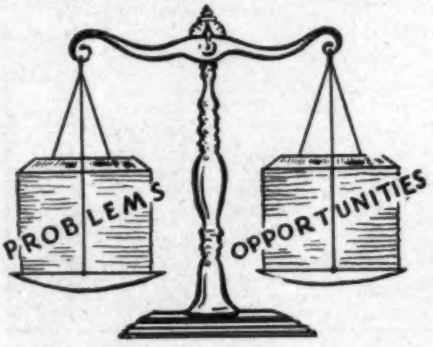
Commodity	Value (thousands of dollars) 1937
Malt	1,609
Hides, skins, furs	681
Leather	358
Leather footwear	3,080
Leather gloves	2,133
Textile fabrics, woven:	
Cotton	1,089
Linen	2,003
Jute	987
Other	535
Knit goods	4,073
Cotton gloves	3,296
Lingerie	3,704
Other textile fabrics and made-up articles	1,977
Hats, hat shapes	604
Wood and manufactures	563
Wood pulp, chemical	1,995
Paper and manufacture	745
Hops	1,234
Magnesite, calcined	112
Porcelain wares	663
Glass and glassware	5,062
Imitation gems	793
Chemicals, medicines	370
Jewelry of base metals	531
Musical instruments	435
Pencils	185
All other	4,204
TOTAL	38,832

By CAPTAIN R. A. COOKE

Traffic Manager, American Newspaper Publishers Association

THE newspaper publishing business recently was asked to present before the Joint Air Transport Users Conference its views on the opportunities for and the problems of the distribution of daily newspapers in air cargo service. In speaking for the association on this subject, I did so not with the idea of commiting any particular newspapers to the views set forth nor did I speak in behalf of any individual newspaper—but I did make the general statement that air cargo service will eventually have a place in the distribution of daily newspapers to distant points.

At the present time, although a number of the leading airlines, including American Airlines, have published a fairly comprehensive scale of both class and commodity rates for the movement of newspapers in air cargo service, they have not resulted in any heavy movement of this commodity. There are several reasons for this. One is the rate scale or the cost of service; another the irregularity of service, and still another the area of distribution which can logically be served has not been determined.



Essentially a newspaper is a perishable product. Nothing is as stale as yesterday's news. Therefore the element of time is a prime requisite in distributing newspapers in city, suburban, or country areas. At present the distribution by motor truck, by carrier, by railroad, by express service and in United States mail service is highly organized and of long standing. These forms of service provide flexibility of movement with regularity on a generally reasonable cost basis for the service.

Distribution in the city of publication and the adjacent suburban territory is made by privately owned or contract motor trucks, in some cases assisted by local carrier boys. Distant areas of distribution are served by railroad, express, and United States mail service.

The country areas are the only territories in which air cargo service can be effectively used. One of the principal arguments offered by the air cargo lines for the use of their service in the distribution of newspapers to distant points is the speed with which they can be delivered. This, of course, is a valid argument, but there are certain correlated factors that must be considered before this statement can be accepted as a solution to the problem of reaching far-distant points quickly.

Under existing railroad schedules, morning newspapers can be distributed on the day of issue to points as far distant as 300 miles from the city of publication. This distribution is made possible not only by the regularity of train service, but by the basis of rates that has been established to move them. In the newspaper publishing business this particular type of transportation is known as railroad baggage car service. The rates applicable make possible same-day distribution as far as 500 miles from the point of shipment on a rate that averages about one-half cent per pound.

In the Western section of the United States there is a similar basis of rates applicable via railroad, except that the distance is somewhat shorter. In addition to these rates, which apply on an "any quantity" basis, with minimum costs per shipment ranging from 50 cents to one dollar, there are "volume" rates that average about two-fifths cent per pound. It should be pointed out, however, that baggage car rates are largely single-line rates; *i.e.* applicable only over the line of a single railroad.

Also, there are rates applicable via the Railway Express Agency on a basis of one cent per pound which are not extensively used, largely because this class of service offers no faster transportation than that offered by the railroads in moving papers in baggage car service. However, in some states, such as Texas, Oklahoma, Arkansas, and Arizona, rates for the transportation of newspapers in railway express service are made on basis of rates of one-half cent per pound for application on a statewide basis. In California there are rates via Railway Express Agency which are made on a "per copy" basis which produces a lower cost than the pound basis. Both the railroads and the express company have given recognition to the inherent transportation advantages that newspapers possess and have established rates accordingly.

The Author

Captain E. A. Cooke has had considerable transportation experience both in railroad and transportation fields. He is a practitioner before the Interstate Commerce Commission and the United States Maritime Commission, as well as a member of the Association of Practitioners before the ICC. He is also a member of the Traffic Club of New York.

During the war Captain Cooke served as Assistant G4, Transportation, Seventh Army Headquarters overseas. In this capacity he participated in the invasion of Sicily, and did reconnaissance work in Corsica, Sardinia, and Italy. For some years past he has served in the position of traffic manager of the American Newspaper Publishers Association, an organization comprising approximately 760 daily newspapers located in the United States, its possessions, and Canada.

THE DAYTON JOURNAL

On the Balloon "Hoosier," June 29, 1909.
JIM CROW EDITION
Printed in the Air.
(Published by Howard Burba)

THIRD & LAST EDITION

3 p. m. We are now passing 75 miles south of Indianapolis, ALL WELL.

SECOND EDITION
AT 11 40 WE ARE 6700 FEET HIGH WE ARE PASSING FRANKLIN
GOING Southwest,
Taking Dinner, Speed 26 Miles.
1 O'clock Shot at by farmer--He missed.

The staff consists of these who are also the carrier boys: Dr. P. M. Crume, F. G. Carley, B. H. Wendler, L. Custer. Col. Geo. McClellan is chief of the staff and the pressman is Howard L. Burba, the polieve reporter of The Journal.

Keep this copy of the miniature Journal—and emember it is the first paper ever printed above the earth. Weather fair. Get the big Journal for a full account. God bless all of you.

Away, and away and away—that 's the feeling. "Passing here is the Soldiers' Home," said Prof. Brumbaugh. "That little thing down there," said McClellan. "Who'd a thought it." The fact was it looked only larger than the face on a postage stamp.

AIRBORNE—AND HOW!—Reproduction of the first newspaper ever printed in the air. The Jim Crow Edition of The Dayton Journal was printed in the balloon, Hoosier, on June 29, 1909.

Compared with these rates are the initial air cargo service rates that were established by the Railway Express Agency under contract with 16 domestic airlines which established rates four or five times higher than rail-express rates. In fairness, however, it should be stated that effective July 1, express-air rates for newspapers were reduced 60 percent which has resulted in an accelerated movement within the Southeast. Also, the air cargo lines themselves have independently established both class and commodity rates on newspapers. Prominent in this field has been American Airlines which have published Class D rates equivalent to 50 percent of the 100 percent Class A rates.

Commodity rates which supersede class rates and which provide for services only from and to the airports of this carrier have also been published on a ton-mile basis that ranges from 38 cents per ton-mile for newspapers in less than 500 pound lots down to 32 cents per ton-mile for newspapers in lots of 5,000 pounds and up. On these bases a rate has been published from New York to Buffalo of $4.65 per

100 pounds on a 5,000-pound minimum lot. Compare this air cargo rate with a 40 cent's per 100 pound rate for the same minimum via railroad that can meet a morning paper day-of-publication required delivery.

From New York to Washington, D. C., via air cargo service for a minimum of 500 pounds, the rate is $3.80 per 100 pounds as compared with 50 cents per 100 pound rate from New York via railroad. It will be noted that the air cargo rates are 10 and seven times higher respectively than the present rail rates.

Considering the transportation characteristics of newspapers in bundles, we do not believe there is a proper or reasonable basis of rates in effect for the movement of this commodity in air cargo service. However, we do not believe that the air cargo rates should be on the same level as the rail rates, but there should be a fair degree of comparability.

What a reasonable rate is we are not prepared to state at this time, but we can safely say that they should be predicated on a mileage group basis with a descending per ton-mile return as distance increases. When consideration is given to the level of the air cargo rates on fruits and vegetables from Pacific Coast territory to Eastern points which move on a basis that approximates 15 cents per ton-mile, notwithstanding these commodities do not possess the favorable transportation characteristics of newspapers, our statement is conservative.

Of course, not all newspapers can avail themselves of railroad services to distant points because of the different publication time. For example, the afternoon papers cannot reach distant points on the day of publication with the same facility that morning papers can. Thus, if the airlines had a reasonable level of rates and a regularity of service, which is not now present because of priority movements and which newspapers do not possess at the present time, there appears to be no reason why air cargo service could not fill the void that exists for afternoon publications if the rate basis were fair.

Wuxtry!

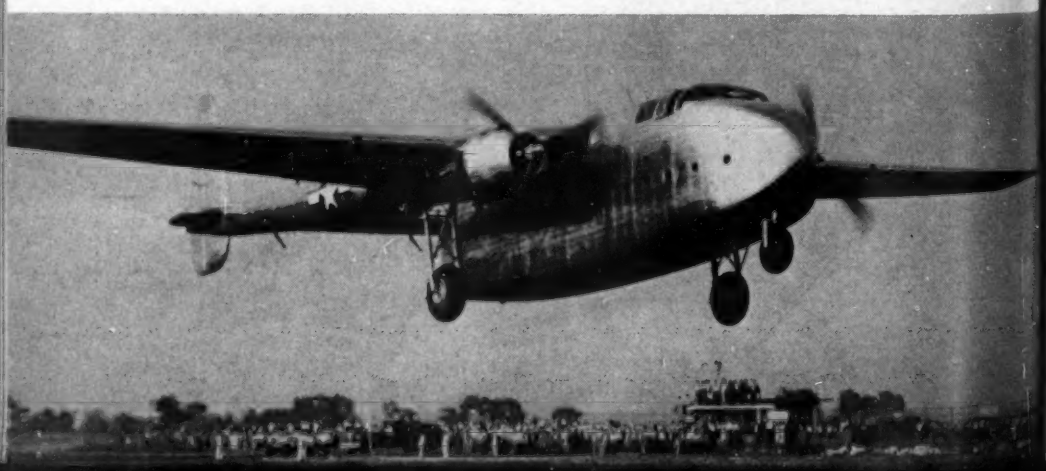
For the first time in the history of St. John's, Newfoundland, *The New York Times* was flown and delivered by Pan American Airways the day after publication. The September 14 editions were shipped by *Clipper* to Botwood, take-off airport for the Atlantic hop, and delivered to St. John's by train. Reports received from St. John's said that all copies were immediately snapped up by the "Newfies."

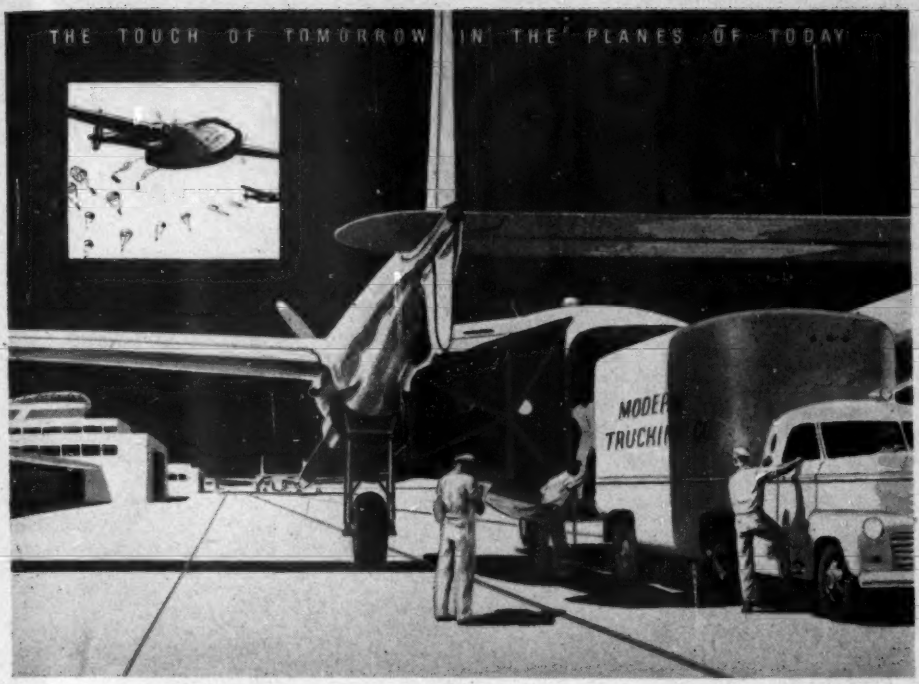
Perhaps I should state what we consider the favorable transportation characteristics of newspapers to be. First, they have a high weight density per cubic foot; second, they are impervious to damage; third, there is no deterioration of product because of high altitude flying; and fourth, they have a low value. So, from an air cargo standpoint, they have every favorable transportation characteristic which ought to carry great weight in the establishment of any air cargo rate basis.

At the present time, should newspapers desire to move papers in any volume on the present published rates, they are faced with lack of plane space for this class of cargo. The DC-3s now in use have a cargo capacity of approximately 2,000 pounds when carrying passengers and from 4,800 to 6,000 pounds when carrying cargo exclusively. Thus, even if the rate basis did not offer an obstacle, lack of space does at present and will continue to do so for some time.

Assuming the establishment of a reasonable rate basis, the future holds brighter prospects from this standpoint. We understand that DC-6s, having capacity of 18,000 pounds, and C-82 *Packets*, having capacity ranging from

TRUCK HORSE OF THE SKY—The Fairchild Packet, cited by the author as increasing "the potentiality of the commercial plane as a revenue cargo carrier."





A Ship of War—With a Peacetime Destiny

You won't have to beat this weapon of war into a peacetime plowshare. V-J Day will see the Fairchild-designed "Packet" ready to plow the airlanes of commerce.

Built specifically for military cargo—tons of guns, men and equipment for battle—the "Packet's" huge hold will receive the bulky goods of peacetime commerce with ease, speed them hundreds or thousands of miles to their destinations.

Designated by the Army as the C-82, the "Packet" has been nicknamed the "flying boxcar." Its cargo compartment (2,870 cubic feet of unobstructed and continuous space) carries 93% of the capacity of a railroad boxcar.

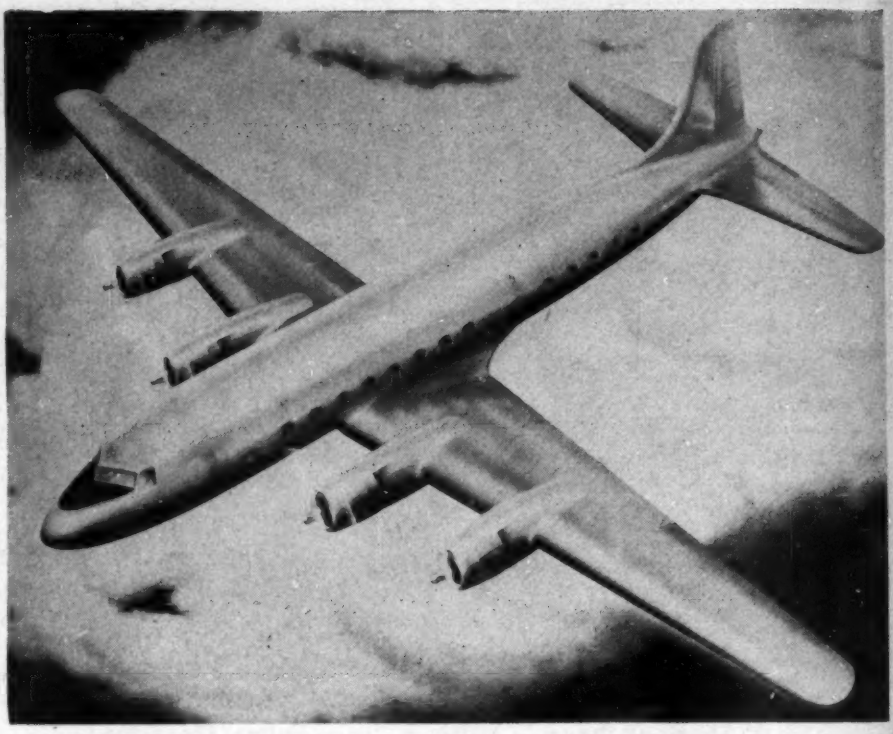
Facility in loading is a triumph of Fairchild design. Split doors at the rear of the fuselage open to the full width of the cargo space. Cargoes roll smoothly into the "Packet" from a truck, for the "Packet's" horizontal floor is at standard truck floor height. Smaller pieces can be loaded through a forward loading door.

The value of the "Packet," to shippers of all types of "flyable" cargo, will be as broad as the future of air cargo itself. Time and experience will attest to its economy, its many uses. Thus, the "Packet," now at war, emphasizes the Fairchild tradition of advanced aviation, "the touch of tomorrow in the planes of today."

BUY U.S. WAR BONDS AND STAMPS

Fairchild Aircraft

Division of Fairchild Engine & Airplane Corporation, Hagerstown, Maryland



DOUGLAS DC-6—Another one of the big planes with which newspapers may be able to build up a market in distant cities.

13,000 to 19,000 pounds, will be placed in service, vastly increasing the potentiality of the commercial plane as a revenue cargo carrier. Such service would enable newspapers to enlarge their present area of distribution by building up a market for their newspapers in distant cities.

While this article deals with the present distribution of newspapers, principally via motor truck and railroads, the distribution of newspapers in United States mail service under second class railroad mail privileges cannot be overlooked. My attention has been directed to the possibility of securing second class postage rates for the movement of newspapers in air cargo service. This would provide a flexible, although somewhat slower, class of service than that which can be accomplished by the use of straight air cargo service and would be of value to the daily newspaper publishing business.

I have been advised that the commercial airlines have more than repaid the air mail subsidies granted to them by the Post Office Department in the returns made to the Government by the carrying of air mail. We do not advocate this. It is merely a suggestion that has come to our attention. We recognize it as one of the methods by which a greater volume of newspapers could be handled for movement to distant points in a much faster service than that presently provided by second class postage moving in railroad service.

The development of air cargo service has progressed admirably and while as a result of the experiences in the Air Transport Command, will be further greatly enhanced; and there is no reason to doubt that eventually, if reasonable rates are established, many newspapers will take advantage of this form of service to increase their areas of distribution.

Many large newspapers have already given consideration to the matter of moving newspapers in air cargo service, and while they all recognize certain of its advantages, the level of the prevailing rates and lack of regular service have been deterrents that prevent large scale daily use.

The newspaper publishing business believes there is a place for the carriage of newspapers in air cargo service, but it must be implemented by a rate structure adjusted to the transportation characteristics of the newspaper, and regularlty of movement. These we hope will shortly follow.

Sir Miles Thomas on Air-Distributed Newspapers

MAYBE it's a flight of my fancy, but I can visualize an aeroplane with a couple of gliders in tow being used to distribute a widely circulating morning or, particularly, evening newspaper. And the Provincial Press will be able to benefit from this development as well as the London national papers. The tug and glider train would set off loaded with copies hot from the press. These copies would be dropped by parachute as each provincial town was reached. In each machine there would be a light alloy printing device, so that the latest news flashed up by radio could be put in the Stop Press column before the parachute package was let go.

And why stop at Britain? There is no reason why all the big British newspapers should not be distributed by air-glider train and parachuted to all the big cities of Europe. Or the New York papers distributed swiftly in the Eastern states of America.

However swift may be the transmission of news over the radio, the written word—particularly the illustrated word—will always augment the spoken message, and the influence of the Press in the up-country districts has been, and always will be, a big factor in maintaining and emphasizing their cultural activities.

Special Fees for Cargo Planes are Announced

The recent announcement of new landing fees for Philadelphia Municipal Airport is an example of what is happening today in several other cities, as well—cities which are including special fees for cargoplanes in their revisions of airport charges.

As the number of arrivals increases, the costs decrease, giving an advantage to the frequency of scheduled operations. Thus, in Philadelphia, the first four scheduled arrivals cost $100 a month each. The charge for the next eight arrivals $75 per month each; for the next four, $50 each; and for all above that number, $25 each. Landing fees for cargoplanes of weight not in excess of 8,000 pounds are $100 a month for each of the first four arrivals, and $25 for each additional scheduled trip arrival.

The International City Managers' Association has made comparisons of landing fees in nine cities, and shows the following charges for 10 regularly scheduled trips: Chicago, $1,075; Pittsburgh, $1,075; Philadelphia, $850; Detroit, $850; Los Angeles, $800; San Francisco, $800; Indianapolis, $650; St. Louis, $375; Birmingham, $350.

American, Mid-Continent Have Consolidation Plan

A plan for the consolidation of American Airlines and Mid-Continent Airlines will be submitted shortly to the Civil Aeronautics Board for approval. The integration of the two companies is to be effected by an exchange of stock and the merging of their personnel and facilities, according to statements by C. R. Smith, chairman of the board of AA, and Joseph A. Zock, chairman of MCA.

Mr. Zock said that the stockholders he represents, who control over 50 percent of MCA's stock, will accept the proposal to exchange four shares of their stock for one share of American. Among the advantages expected to result from the consolidation are better equipment routing, economy of system operation, and provision of better service at lower costs.

MCA presently operates routes throughout the Mississippi Valley, serving such cities as Minneapolis, St. Paul, Sioux City, Rochester, Des Moines, St. Louis, Omaha, Kansas City, Tulsa, Shreveport and New Orleans. AA operates a transcontinental route from Boston, New York, and Washington to Los Angeles and an extensive system of routes throughout the East, Middle West, Canada and Mexico.

Two Illinois counties, Madison and St. Clair, are working together, under the provisions of the County Airport Law, in order to realize a plan which recommends airport facilities for every community in both counties, which would make a total of 53 airports.

The nation has been urged by Senator Thomas C. Hart to support one airline company for transoceanic transportation flights, so that we will be able to meet "the Government-fostered enterprises of other nations" on an equal footing.

Increased aviation activity in New Orleans, as evidenced by the inauguration of service by a sixth major airline (McA), and 96 applications to provide air service into or out of New Orleans in the postwar period already on file, have caused that city to expedite its work on the $5,000,000 Moisant International Airport.

The annual meeting of the National Association of State Aviation Officials has been postponed until November 5, 6, 7, and will be held at the Coronado Hotel in St. Louis, Missouri.

Potential United States Air Cargo Trade With South America

By ANNE CORBETT
Transportation Unit
Bureau of Foreign and Domestic Commerce

AMERICAN products, from fruits to engines, are moving to all parts of the world by air in a steadily increasing volume. Ventures into the field of all-cargo operations by several of our airlines may be expected to increase as the list of commodities attractive for profitable air shipment is extended. An estimate of the potential United States overseas air cargo trade is of necessity conservative due to unpredictable reductions in the costs and charges of future air shipment.

Probably some of our most extensive immediate markets for air-shipped cargo are the countries of South America. Because of this expectation the Transportation Unit of the Department of Commerce has prepared a series of air cargo potential studies to show commodity, tonnage, and revenue possibilities in air trade between the United States and individual countries of South America. These recently completed studies are based on 1939 trade, since trade of later years was affected by the war. Commodities selected as air potentials are those which had values of 50 cents or more per pound, and, in addition, those possessing characteristics of perishability, fragility, or style with values less than 50 cents per pound. It is recognized that these criteria indicate possibilities worth looking into rather than probable movements by air, although in many instances the studies uncovered commodities known to be moving by air today.

An appraisal of the volume and value of potential air cargo, which is previewed in the Transportation Unit studies, suggests a much more active air shipping business eventually than is now moving between the United States and countries of South America. The potential air cargo volume between the United States and the South American countries (the Guianas excepted) based on the criteria used in those studies is shown as 283,887,201 pounds, with a value of $61,659,170—an average of 31 cents per pound. The export potential air cargo volume of 117,974,677 pounds is considerably overbalanced by the import potential air cargo volume of 165,912,524 pounds. The ratio is reversed in the comparison of values. Potential air cargo exports to the South American countries are valued at $52,166,631 whereas air potential imports into the United States from those countries are valued at only $9,492,539. However, both potential air exports and imports have very low average values per pound—for the former, 44 cents, and six cents for the latter.

A fact to be kept in mind is that the air cargo volume stated above was derived from a formula for determining potential air cargo which called for the inclusion of all perishables, fragiles, and commodities possessing style characteristics, though the commodities of these types with extremely low values per pound are not likely to move in volume by air under present conditions. The tables and footnotes included in this article show the extent to which such commodities were included.

Table I shows the number of potential air export and import commodities and the total shipping weight and value of such selected exports and imports between the United States and each of the 10 South American republics. From the data given there, the proportions of the total number of export and import commodities and their values which are air cargo potentials comprised can be computed.

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What's more, this swift, economical air service can help you extend markets and build customer good will.

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THE NATIONAL AND INTERNATIONAL ROUTE OF THE FLAGSHIPS

Table I

Air Cargo Potentials Between the United States and South America in Relation to Total Trade in 1939

Destination or Source	Total Trade: Number of Commodities	Total Trade: Value (dollars)	Air Cargo Potentials: Number of Commodities	Air Cargo Potentials: Shipping Weight (pounds)	Air Cargo Potentials: Value (dollars)
U. S. Exports					
Argentina	1,259	70,621,123	401	9,753,575	9,978,776
Bolivia	1,065	4,496,427	351	1,081,391	895,734
Brazil	1,358	80,345,195	476	13,575,373[1]	10,991,782
Chile	1,290	26,637,988	422	4,030,226	3,857,255
Colombia	1,503	50,639,237	484	39,181,279[2]	10,755,901
Ecuador	1,186	5,765,026	359	5,935,144[3]	1,149,358
Paraguay	476	672,433	142	135,575	99,201
Peru	1,351	18,841,096	445	8,897,994[4]	3,294,096
Uruguay	877	5,126,722	282	673,539	665,454
Venezuela	1,510	61,588,221	508	34,710,581[5]	10,479,074
Total	11,875	324,733,468	3,870	117,974,677	52,166,631
U. S. Imports					
Argentina	297	58,548,748	86	14,678,511[6]	2,468,123
Bolivia	28	803,748	9	504	1,059
Brazil	255	106,304,962	47	1,731,335[7]	3,406,212
Chile	102	30,951,191	27	1,433,946[8]	236,543
Colombia	91	48,943,702	46	96,936,454[9]	2,255,384
Ecuador	64	3,523,355	18	46,613,148[10]	828,523
Paraguay	20	1,710,532	6	162,273	93,453
Peru	113	13,826,869	28	6,649	19,630
Uruguay	76	8,587,341	12	47,120	19,603
Venezuela	74	23,414,943	20	4,302,584[11]	164,009
Total	1,120	296,615,391	299	165,912,524	9,492,539

Volumes indicated by

[1] Includes 1,972,084 pounds of grapes, valued at $129,131, averaging $0.07 per pound; and 106,300 pounds of dynamite, valued at $26,734, averaging $0.25 per pound.

[2] Includes 17,532,525 pounds of lard, valued at $1,172,933, averaging $0.07 per pound; 741,280 pounds of dynamite, valued at $108,088, averaging $0.15 per pound; 2,312,436 pounds of unfilled glass containers valued at $127,184, averaging $0.05 per pound; and 5,734,158 pounds of beverage bottles valued at $108,949 with an average value per pound of $0.02.

[3] Includes 2,868,390 pounds of lard, valued at $194,362 with an average value of $0.07 per pound; 621,500 pounds of dynamite, valued at $63,686, with an average of $0.10 per pound; and 676,316 pounds of beverage bottles, valued at $12,850 and averaging $0.02 per pound.

[4] Includes 3,324,878 pounds of dynamite, valued at $364,493, with an average value of $0.11 per pound.

[5] Includes 13,068,162 pounds of lard, valued at $908,503, averaging $0.07 per pound; 3,653,895 pounds of beverage bottles, valued at $69,424, with an average value of $0.02 per pound; 1,420,891 pounds of unfilled glass containers, valued at $78,149, averaging $0.05 per pound; and 1,049,623 pounds of dynamite valued at $158,667, averaging $0.15 per pound.

[6] Includes 12,745,640 pounds of grapes, valued at $455,584, averaging $0.04 per pound.

[7] Includes 80,000 pounds of bananas, valued at $420, averaging less than $0.01 per pound.

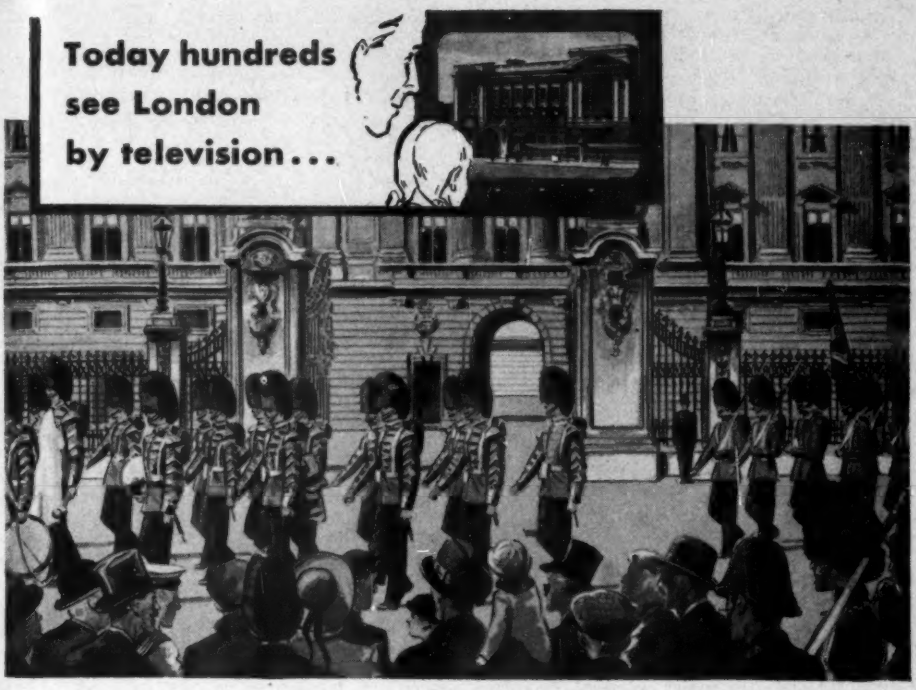
[8] Includes 1,131,103 pounds of grapes, valued at $33,820, averaging $0.03 per pound.

[9] Includes 96,764,171 pounds of bananas, valued at $1,361,648, with an average value per pound of $0.01.

[10] Includes 46,524,734 pounds of bananas, valued at $548,086, averaging $0.01 per pound.

[11] Includes 4,261,050 pounds of bananas, valued at $67,480, averaging $0.02 per pound.

The presence of a considerable volume of low-valued perishable and fragile import and export items, which, though included in the table for statistical completeness, have small chance for air shipment under present rates and prospective rates of the future, has already been noted. Those commodities in this category are indicated by footnotes in Table I. They include bananas, grapes, dynamite, lard, unfilled glass containers, and beverage bottles. Adjustments were made to exclude these items to the extent in amount and value given in those footnotes. A few additional low-valued commodities occurred in the initially computed air cargo potential summary, though in relatively insignificant amounts. Because removal of these would be done arbitrarily and would not be consequential in the final balance, they remain in Table II which shows the results of the exclusion of extremely low-valued commodities which occurred in outstanding volume.



Tomorrow thousands will go to London by CLIPPER

Today seats aboard Pan American Clippers are limited. But some day soon, Pan American's plans for high-speed, low-cost transport within reach of the average man will come true. Then thousands of Americans who have only *dreamed* about London will be able to *go* there by Clipper in 14 hours from New York.

And there is no other city like London! You will want to see the Changing of the Guard at Buckingham Palace... drive up to Oxford, Cambridge, or Stratford-on-Avon where Shakespeare was born.

Wherever you plan to fly—Britain, France, Latin America, Alaska, Hawaii or China—remember that in the past 18 years Pan American has carried more than 3,250,000 passengers overseas... a record unequalled by any other international airline.

Postwar Clippers will provide staterooms, game lounges, the world's finest meals.

•

For your postwar Clipper trip, see your Travel Agent.

PAN AMERICAN WORLD AIRWAYS

The System of the Flying Clippers

In the consideration of the overall United States-South America adjusted air cargo potential situation, it is observed that the leading destination of United States potential air traffic is Venezuela, with Colombia second, and Brazil third. Using the adjusted basis, the average values per pound for air cargo potential commodities to these countries are 60 cents, 72 cents, and 94 cents, respectively. The average value of total United States air potential exports to South America is 77 cents per pound.

The import picture is quite different after the bulky volumes of bananas and grapes have been excluded from the air cargo list. Argentina is shown as the outstanding source of United States potential air cargo. Brazil and Chile follow next. The average values per pound of the potential air cargo imports from these countries, on the adjusted basis, are $1.04, $2.06, and 67 cents, respectively. The average value of total United States import air potentials from the South American countries is $1.63 per pound.

It will be noted that the potential air exports from the United States to each country far overbalance the imports from that country considered suitable for air shipment. Though the adjusted air potential table presents a more realistic picture of possible future air cargo traffic, the return-haul question effected by the changes is a major problem. Total air potential exports to all the South American countries are 91 percent greater in weight and 85 percent greater in value than are total air potential imports from those countries. *However, a favorable factor is the relatively high value per pound for the air potential imports as compared with that for air potential exports.*

Facts given in data on actual air exports and imports add further interest to the trade considered potential air traffic in the Transportation Unit series of reports. Census data are available and may be compared for actual air exports during July, 1943, and August, 1944, and imports of August, 1944.

A total of 161,603 pounds were exported by air from the United States to the South American countries during August, 1944. Their value totaled $1,160,842—an average value per pound of $7.18. Air exports of July, 1943, amounted to 190,617 pounds and were valued at $827,163. Their average value per pound was $4.34.

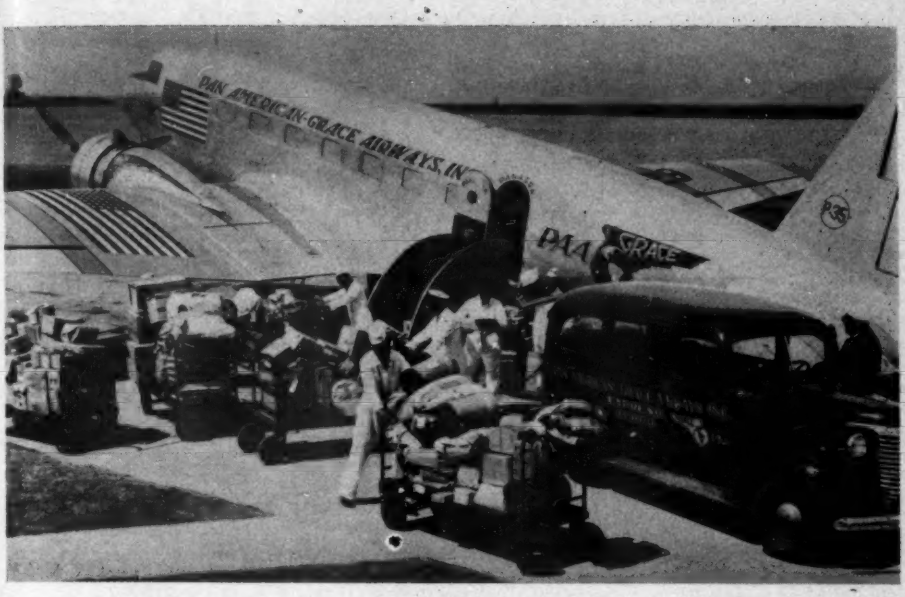
The United States imported 81,286 pounds by air from the South American countries during the month of August, 1944. The value of these air imports totaled $1,278,878, giving an average value of $15.73 per pound.

Though the value of imports from South America by air exceeded exports by air to those countries for the month of August, 1944, the volume of the air exports was almost twice the volume of the air imports. The

Table II

Adjusted Air Cargo Potentials Between the United States and South America

Destination or Source	Shipping Weight (pounds)	Value (dollars)	Average Value per pound
U. S. Exports			
Argentina	9,753,575	9,978,776	$1.02
Boliva	1,081,391	895,734	.83
Brazil	11,496,989	10,835,917	.94
Chile	4,030,226	3,857,255	.96
Colombia	12,860,880	9,238,747	.72
Ecuador	1,768,938	878,460	.50
Paraguay	135,575	99,201	.73
Peru	5,573,116	2,929,603	.53
Uuruguay	673,539	665,454	.99
Venezuela	15,518,010	9,264,331	.60
Total	62,892,239	48,643,478	$.77
U. S. Imports			
Argentina	1,932,871	2,012,539	$1.04
Bolivia	504	1,059	2.10
Brazil	1,651,335	3,405,792	2.06
Chile	302,843	202,723	.67
Colombia	79,117	893,736	11.30
Ecuador	88,414	280,437	3.17
Paraguay	162,273	93,453	.58
Peru	6,649	19,630	2.95
Uruguay	47,120	19,603	.42
Venezuela	41,534	96,529	2.32
Total	4,312,660	7,025,501	$1.63



PERUVIAN EXPORT—A Panagra air transport takes on a load of freight at Lima, Peru. "Air transportation," says the author, "has developed new markets for American goods abroad and has also made possible our use of new foreign products in the United States consuming market."

summary of potential air cargo trade between the United States and the South American countries showed the average value per pound of potential air imports to be higher than that for potential air exports. The above facts indicate this is also the case in actual air trade. However, it is pointed out that present air traffic is mainly represented by higher valued items, so per pound averages are much higher than those given for the potential air trade which allows a greater possible volume of lower valued commodities for profitable air shipment.

Data on United States exports and imports by air to the world adds significance to the role of the South American republics in the total United States air cargo trade.

During the month of July, 1943, the South American countries received 38 percent of the value and 26 percent of the volume of United States air exports to the world. The North American region surpassed this and during the same month received 45 percent of the value and 66 percent of the volume of our air exports.

The volume of United States air exports to the world during the month of July, 1943, totaled 743,664 pounds. The value of these air shipments was $2,148,655—an average per pound value of $2.89. Statistics available on August, 1944, air trade show increases in the total United States air export volume to 823,193 pounds and in the value to $3,649,117. The average value per pound for that month almost doubled that for July of the previous year.

Imports by air into the United States from the world during August, 1944, totaled 447,609 pounds and were valued at $4,390,470—an average value of $9.81 per pound.

During the month of July, 1943, exports by air from the United States in the machinery and vehicles, textile, chemicals and miscellaneous commodity groups represented 88 percent of the total value and 66 percent of the total value of air exports to the world.

The average values per pound for commodities shipped by air in July, 1943, to the more distant countries of South America, were higher than those to closer countries. Air exports to Colombia and Venezuela averaged slightly more than five dollars per pound while those to Chile, Uruguay, and Argentina averaged more than double that. This value pattern was followed in the air trade with countries of other world regions. The value per pound of United States air exports to all countries of the world in July, 1943, averaged $2.89. The United States air exports to countries of North America, averaging $1.98 per pound, was the factor which lowered the total average. Air exports to South America averaged $4.26; to Europe, $4.22; to Africa, $4.67; to Australia, $8.44; and to Asia, $18.94. This is significant in the illustration of the fact that high value items are most probable for

distance shipping, and those with lower values will find their most extensive markets in the immediate future within a narrower distance radius.

Air transportation has developed new markets for American goods abroad and has also made possible our use of new foreign products in the United States consuming market. Furthermore, air transport has effected the economic development of countries where other forms of transportation are lacking. In the South American instance, difficulties in surface transportation has been a key to the expansion of air freight service.

Air transportation's role in freight shipment has been comparatively small due especially to the low carrying capacity of planes and the high costs of operation. *An increase in the volume of cargo for air shipment would encourage the early reduction in air rates.* A large air cargo business for the future will mainly depend on the extent of technical developments which at present are gradually progressing.

Former Axis Nations Not Welcome in FAI

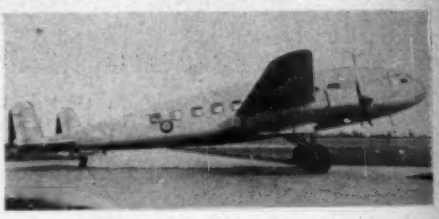
The National Aeronautic Association reports that former Axis countries will be barred from membership in the Federation Aeronautique Internationale, world organization of non-commercial aviation, until governmental decisions have been made as to their standing in the United Nations Organization and the status of their internal aviation has been clearly established.

News of Four New French Airplanes

Now that France is slipping into gear again, news from the liberated country is reaching the offices of AIR TRANSPORTATION in greater volume. Latest advice concerns four new French planes: the *Colmar, Cargo, Sucio,* and *Bellatrix.*

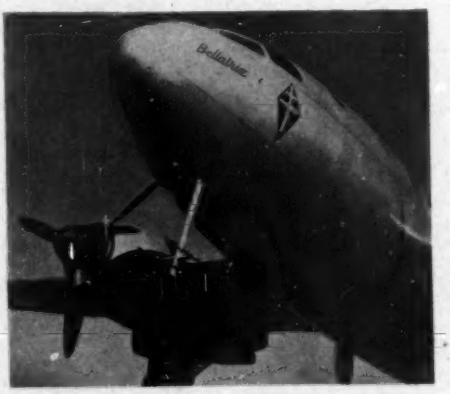
Preliminary details on the Breguet 500 *Colmar,* a 14-ton commercial transport, give it a cruising speed of about 250 miles an hour and a maximum speed of approximately 305 miles an hour. The plane will be capable of transporting 24 passengers and 4,500 pounds of freight a distance of 1,250 miles.

Breguet's 761 *Cargo* is even more impressive. A 40-ton plane, it will have a cruising speed of 220 miles an hour and a top speed of 300 miles an hour. The *Cargo* is reportedly capable of flying 16 tons of freight plus 11 passengers a distance of 625 miles, or more than 10 tons of freight plus 58 passengers,



BREGUET 500 COLMAR—Fourteen-ton transport cable of flying 25 passengers and more than two tons of freight.

or eight tons and 400 pounds of cargo plus 78 passengers. According to Breguet, it will be possible eventually to increase the range of the *Cargo* for transatlantic flights by reducing freight.



BELLATRIX—Sub-stratosphere sky liner with a top speed of 300 miles an hour. It can make nonstop flights of 1,250 miles.

The *Bellatrix,* a 12-ton transport, is built for sub-stratosphere travel. It has a top speed of 300 miles an hour and a cruising speed of 257 miles an hour, with a range of 1,250 miles. One of its features is an insulated cabin.

In the personal plane class is the *Sucio,* a craft that "can be sold at a price little more than that of a high-powered automobile, and can be safely flown by persons of limited flying experience." The Sucio has a cruising speed of 140 miles an hour, with a range of 713 miles.

The decision has been reached by the French Government to build the Orly Airfield, southeast of Paris, presently used by the United States Army's Air Transport Command, into the country's major airport. It will have 10 runways, hotels, stores, and a terminal. There is to be railroad and helicopter service linking Orly with Paris. It is reported that LeBourget Field will be used principally as an air cargo terminal.

Coming Soon!
Air Cargo Announcement by United

With its wartime job behind it, reconversion well under way, and additional equipment coming along soon, United Air Lines will shortly announce a complete plan for an air cargo service to greatly expand its already large-scale participation in the movement of air express.

United's up-to-the-minute postwar plan—with the lowest possible rates consistent with good business practice and good service—will be of interest to every shipper.

United, the first airline to introduce round-trip, coast-to-coast flights seven days a week, with planes devoted exclusively to cargo, will provide shippers with the service, rates and schedules which result from a 3-year intensified study of air cargo and its possibilities.

Watch for United's forthcoming air cargo announcement.

Write to Air Cargo, United Air Lines, 5959 South Cicero Avenue, Chicago 38, Ill.

AIR-TRANSPORTATION NEWS

REG. U. S. PAT. OFF.

LILY FOR AIRCRAFT —Portable seadrome invented by R. M. Hamilton. It will take on heavy planes even with waves up to 36 feet.

Robinson Aviation to Move Operations to Bendix Field

Complete terminal facilities for the private flier, on a scale hitherto unavailable in the New York metropolitan area, will soon be provided at Bendix Airport, Teterboro, New Jersey, by Robinson Aviation, Inc.

To provide a natural gateway to the metropolitan area for the private flier, Robinson will transfer its entire operations to Bendix Airport, and will provide full facilities to meet the needs of both local and out-of-town fliers. Limited service will start next month.

The company has leased from Frederick Wehran, president of the airport, the former Fokker Aircraft factory and a nearby hangar. These will provide heated storage space and facilities for complete maintenance and repair work. In addition, preparations are now being made to erect a modern operations building which will include accommodations for private plane operators and their passengers. Included will be a pilots' lounge to serve as headquarters for private plane owners based at the Robinson terminal and for visiting pilots. Business men who will come to New York in their own airplanes will find telephone and stenographic services available. A restaurant and snack bar will be located in the building. Stand-by taxi service has also been arranged.

The recently formed Robinson Airlines, organized half a year ago to provide direct non-stop service between Ithaca and New York, will use the facilities as its New York terminal.

Briton Devises Way to Land Heavy Planes on Sea Strips

From time to time someone used to pop up with an idea for a transatlantic bridge or a mid-ocean floating airport. The building of the bridge never came to pass, but over in England a man by the name of R. M. Hamilton has found a way to float portable landing strips.

Aircraft with 9,000 pounds of freight have taken off and landed from a test strip 520 feet long and 60 feet wide. Called the "Lily" because of its resemblance to lily leaves in a pond, the airstrip consists of hundreds of buoyancy cans with hexagonal surfaces. The motion of the sea does not affect the floating runway, remaining sufficiently rigid to take on the weight of heavy planes.

It is reported that a Lily of the experimental size can be assembled by 40 men in an hour. These seadromes can be taken apart, transported, and reassembled anywhere. The official report stated that with the present size of buoyancy cans strips up to about a half-mile each can be laid down. The Lily will remain flat with waves up to 36 feet.

AEA Now AAO

The board of directors of American Export Airlines, meeting in New York, voted to change the name of the company to American Airlines Overseas. AAO is the transatlantic division of American Airlines System.

ONE OF KLM'S NEW TRANSPORTS — A Douglas Skytrain in KLM's West Indies service, one of three surplus planes released by the Army to the airline.

KLM's New DC-3s Flying In West Indies Service

With three newly acquired DC-3s from the United States Army's surplus stock, KLM Royal Dutch Airlines is speeding up its Miami-Curacao service. Up to now on a three-day-a-week basis, KLM's reconverted *Skytrains* will, early next month, be flying a daily schedule. Planes will give through connections to Maracaibo, and LaGuaira, Venezuela.

In the first half of this year, KLM's transports carried 17,646 passengers on the airline's routes in the West Indies, as against 16,060 during the first six months of 1944. During the same period, freight and excess baggage increased from 340,000 pounds in 1944 to 385,000 pounds in 1945; revenue passenger miles from 5,200,000 to 5,750,000; and the number of hours flown from 3,865 to 4,528.

PAA's Interest in Avianca Is Reduced from 64% to 48%

In a move greeted enthusiastically by Colombian financial and business circles and the press, Pan American Airways has completed the nationalization of Aerovias Nacionales de Colombia (Avianca), a process begun in 1940.

The transfer of control of the airline to the Colombian people came when PAA, by waiving its right to 64,000 of the 100,000 shares issued by Avianca, reduced its interest in the airline from 64 percent to 48 percent, so that it no longer holds the controlling majority of the stock. In recent months, PAA has also undertaken the nationalization of Panair do Brasil and Cia. Mexicana de Aviacion, in line with its program of placing control and management of local services in the hands of the countries in which they are located.

KLM ROYAL DUTCH AIRLINES

NOW

TWENTY-ONE PASSENGER DOUGLAS DC-3's
FLY KLM'S MAIN ROUTES IN THE WEST-INDIES

- MIAMI
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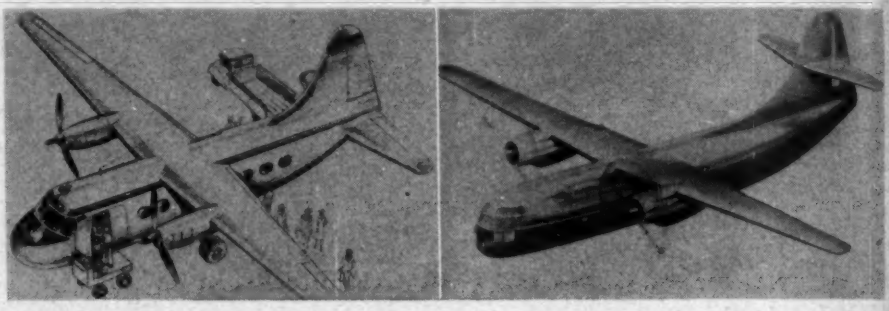
WORLD'S OLDEST AIRLINE



BOEING'S "PAPER AIRCRAFT"—The Boeing Models 417 and 431 (left to right), suggested by the company as a 20-passenger feeder line transport and as a 30-to-40-passenger airliner for domestic service, respectively.

Boeing Company Describes Its Models 417 and 431

Calling its information on two new planes "still tentative," the Boeing Aircraft Company released preliminary specifications and descriptions of the Model 417 and Model 431—the former designed specifically to meet the needs of feeder line operations, and the latter as a replacement for present twin-engined equipment in local service.

The Boeing 417 is a high-wing, twin-engine, 20-passenger transport, having a maximum speed of 243 miles an hour and a cruising speed of 200 miles an hour. Top range is in excess of 1,000 miles.

"A high wing design," says Boeing, "results in a low floor level to facilitate rapid passenger and cargo loading without use of extensive station equipment. The tricycle landing gear retracts fully into the fuselage. Although the preliminary version is planned primarily for low to medium altitude operation, provision has been made in the basic design for future modifications of the passenger cabin to permit pressurization."

Company engineers have estimated ton-mile operating costs of the Model 417 at from 10 to 12 cents, varying with operating conditions.

Like the Model 417, the Model 431 is a twin-engine, high wing transport. The plane will accommodate from 30 to 40 passengers. Its top speed has been put at 287 miles an hour and cruising speed at 252 miles an hour. The Model 431 has a maximum payload of four tons at a range in excess of 1,100 miles an hour. Gross weight is 35,000 pounds. Operating costs are similar to those of the Model 417.

Boeing officials are frank in stating that at the present time both planes are "paper aircraft," and that the designs are flexible and subject to further study and changes in accordance with possible recommendations by airline operators.

DISCUSSING FIVE-CENT AIR MAIL—John F. Budd (left), chairman of the Aviation Section and publisher of Air Transportation, giving his views to (left to right) Postmaster General Robert E. Hannegan; Cyril C. Thompson, United Air Lines; and New York Postmaster Albert Goldman.

FREIGHT WITHOUT TRACKS

a new airline is convinced that there is a bonanza in air cargo and goes ahead to prove it.

THE Air Age is not an empty phrase, and such young organizations as the Air Cargo Transport Corporation are quite aware of it. ACT, for example, took the bull by both horns last March when it became the first all-cargo commercial airline in history. Since that time its operations have, more or less, been the pattern and model for other enterprising companies in the field.

Air Cargo Transport's young history is a case in point—a beacon held out in the direction of those who are convinced that air cargo is a growing giant that will do much to streamline national and international trade. There is a youthful zest happily mixed with a shrewd sense of business which gives this new airline typical American spirit of progressiveness and powerdrive. H. Roy Penzell, president, is no mean organizer. The cargo experts surrounding him are men of his own choice. William L. Rome, general manager, was formerly traffic manager at Miami for the TACA Airways System which is quite an important figure in the transport of air cargo.

There was a need to fill the ever-growing need for speedy transportation. The last of wartime trade still was an important factor; and certainly, today, air cargo looms even more important to the reconverting businessman with a shipping problem. ACT's experience has been such that it is firmly convinced that its type of service will become a public necessity.

The birth pangs of an all-cargo airline are interesting. Glancing at its list of shipments tells, in part, a story of achievement—not only in the rapid transportation of commodities but in the pioneering of uncharted business as well.

It was in July that Air Cargo Transport made its first commercial flight, shipping several hundred pounds of penicillin from the Commercial Solvents Corporation plant in Terre Haute, Indiana, to Miami for transshipment to Sao Paolo, Brazil. A success? You bet! More penicillin air shipments followed; but while this was anything but a rut, ACT

FLYING FREIGHTER—(Above) A typical ACT cargoplane which will haul anything from diamonds to live animals. (Below) A planeload of fruits and vegetables is transferred from an ACT plane to an ACT truck for swift delivery to destination.

AIRBORNE LOBSTERS—To the question, "Can lobsters fly?" Air Cargo Transport says, "Yes!" This is part of a 3,000-pound shipment sent from Portland, Maine, to the Fulton Market, New York.

was anxious to extend itself into other, perhaps greener, fields.

The more verdant fields showed up when other shippers were made aware of the advantages of air cargo. Household goods, lobsters, glassware, baggage, fruit, and even a valuable Afghan hound were carried over a network of charter routes serving Maine, New York, Indiana, Florida, and intermediate points. At the present time, studies are being made to extend service to everything from dairy products to live buffalo in answer to requests actually made for such carriage. Incidentally, Air Cargo Transport has never had a lobster mortality and has delivered all shipments with 100 percent of the lobsters in fine condition.

From this rousing beginning one must not be left with the erroneous impression that Penzell, Rome, and the men under them were wholly without problems. There are difficulties arising which are new and are derived solely from the newness of the enterprise. These problems are being met as they show themselves with the result that ACT is rapidly establishing itself as an essential to the marketing of shippers' products.

In general, the handling of a shipment from the New York area follow an established pattern. Delivery by the shipper is made to ACT's depot in Manhattan, in time for the weighing and documentation before departure to the airport for loading. Delivery is effected only to the destination airport, but arrangements can be made for transshipment for export or for local delivery.

Simplicity and speed of dispatch are important keys in Air Cargo Transport's operations. No schedules or routes are in effect; these are planned and operated at the convenience of the shippers. It is easy to imagine the lengths to which air freight can go when the public realizes the actual low cost of the entire service. Strangely enough, one of the main problems has been in showing that air freight, in point of actual cost, time saved, and greater convenience, is a more profitable means of shipping than any other.

These points are true even with the existing aircraft. When the specially developed Fairchild *Packet* and similar ships become available, rates will be even lower and service even more efficient. When eight or nine tons of material move in the same direction in the same air vehicle, reduced operating costs and increased gross will permit a substantial cut, even in the current low rates.

If the public can be properly educated to these salient points, there is no prediction possible of the lengths to which air cargo transportation will reach. If the novelty can be successfully worn off by frequency of shipment, and if the "specialty" or "priority" concept can succumb to routine operations, even heavy machinery or lumber may find itself being delivered regularly by air.

Anyone would ship a single orchid by air, or a package of valuable drugs, and consider this quite within the ordinary. The existing passenger and express airlines have made small package shipments commonplace. The average citizen can look into the future and see large-scale shipments of perishables, fruits and vegetables, of lobsters and other seafood. The rapid development of the airplane has made this prognosis a simple matter, but it

still carries with it the connotation of choiceness, or rarity.

It required a far-seeing company to realize that a delay on the road is a burden that no product need bear, and that the science of merchandising must be changed radically to keep pace with the developments this decade will bring. Air Cargo Transport's guiding stars are looking toward the day in the not-so-distant future when delivery of periodicals, machinery, drygoods, food products, and even certain livestock, will be a commonplace and a necessity.

At present, ACT is using Lockheed *Lodestar* equipment, but has already purchased and is expecting momentarily delivery of a fleet of Douglas *Skytrain* aircraft more adaptable to a large-scale haulage. Like all other operating airlines, the company anticipates using the aircraft which the war has produced, and will possibly concentrate on an operation based on the *Packet*. Such a mode of carriage will revolutionize even the new and progressive air cargo business, they say.

There is a tremendous market in the sky, and Air Cargo Transport's men are taking seven-league steps to develop and establish it along durable lines. Air freight is here to stay. Everybody knows that. But ACT means to go beyond simple recognition of the fact. Its contribution to the postwar Air Age has already begun, and its advancement of the peacetime aviation era is a promise already made, whose fulfillment will be a powerful force in the air market of the future.

TWO MEN WITH BUT ONE IDEA—H. Roy Penzell, president of Air Cargo Transport Corporation (left), with General Manager William L. Rome. Both have an abiding faith in the future of air freight.

Diverse Cargoes Flown by National Skyway Freight

National Skyway Freight Corporation—the Flying Tiger line—is going after air freight business hot and heavy. In September it transported 34 tons of fruit and vegetables, 17 tons of household furniture, three tons of machinery, four tons of clothing, an equal amount of California wine, 8,000 baby chicks, several automobiles, and large quantities of airplane parts and penicillin. Also flown were several contingents of Marines from coast to coast, a professional football team together with 2,000 pounds of equipment, and groups of motion picture players.

It is reported that early this month the Flying Tigers flew 8,000 pounds of tulip bulbs—the first to arrive in this country since the invasion of the Low Countries—as well as 16,000 pounds of grapes, 10,000 pounds of manufactured garments, and officers and enlisted men from the U. S. S. Astoria.

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These performance estimates have been released by the Republic Aviation Corporation whose *Rainbow*, said by company officials to be "one of the most revolutionary airliners ever conceived," has just been announced. Now in the process of development, the big four-motored job will fit into the groove for global transportation. Stress is being placed both upon extreme speed and complete comfort.

The *Rainbow* will accommodate 40 passengers and a crew of seven, plus 1,600 pounds of baggage, and 1,700 pounds of freight. Its interior will be art-styled for modern arrangement. The pressure and noiseproof cabin will feature dining facilities, a lounge, bar, and comfortable seating arrangement. Plane-to-shore telephone, motion pictures, fluorescent lighting, and a number of other new and novel accessories will be found on board the globe-girdler.

Republic reports that the *Rainbow's* "tremendous power will make it possible to fly around or over the most inclement weather and despite the many modern devices incorporated, this new Leviathan of the air is being built along thoroughly practical principles. It is patterned after the same essentials which established such an enviable reputation for the famous *Thunderbolt* fighter."

Fred Marchev, president of the company, declared that the *Rainbow* was designed and constructed "according to ideal requirements for commercial purposes." These were decided upon after a careful study from a consensus of needs set up by airline officials, and also from information on the expectations and requirements for postwar air travel gleaned through a survey of veteran air travelers.

WHERE TO, MR. & MRS. AMERICA?—Emphasizing how really small the world has become is this descriptive sketch highlighting flight time by Republic Aviation's Rainbow between New York and nine key cities of the world.

Donovan Proposes Sea, Air Integration; Speers Says, "Let's Stick to Own Knitting"

Addressing 250 representatives of the shipping industry at the Overseas Air Commerce Panel of the American Merchant Marine Conference, Gerald E. Donovan, vice president of Moore-McCormack Lines, Inc., proposed that airplane and steamship passenger service be integrated and that established steamship lines be included in the operation of transoceanic air transport routes.

The conference was held this month in the Waldorf-Astoria Hotel. John F. Budd, publisher of AIR TRANSPORTATION, was chairman of the aviation panel.

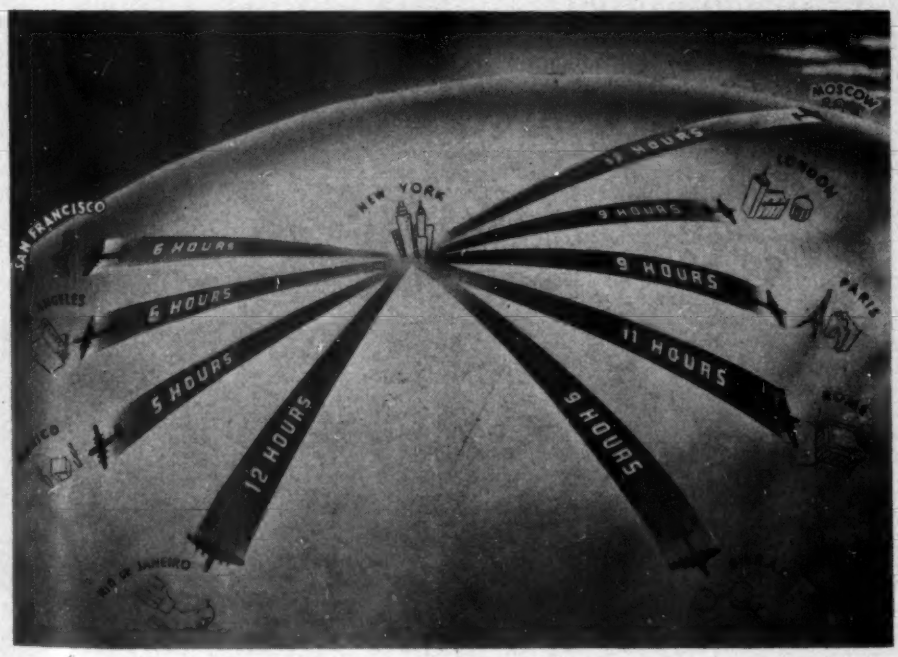
Donovan, who presented the case for American steamship companies, declared that they do not dispute the airlines' claim of a fine record of safety and to an almost unbelievable war record, but that it is not quite enough reason to insist that they be left alone in the field. He said that when the airlines state they alone have the experience and know-how, they are disregarding the history of the merchant marine. Not only can the shipping companies meet flight operation requirements but they are qualified and ready to provide the many other things that international transport requires, Donovan said.

"International air transport is not merely the operation of airplanes," he asserted. "It is not merely the physical delivery of passengers and cargo under a single set of regulations. It is a whole transportation business of an extremely complex nature. Shipping companies have well-established, world-wide organizations and connections that are ready-made for the development of our international air transport in the highly competitive postwar era we are about to enter."

C. R. Speers, regional vice president of American Airlines, in his reply to the shipping companies, stated:

"There will be lots of traffic for all of us. We are not attempting to supplant surface transportation. We have no desire to enter the surface transportation field, nor frankly do we want our field invaded by surface carriers. To me the solution seems to lie in the old saying: 'Let's stick to our own knitting.'"

DON'T FORGET THE VICTORY LOAN



Future of International Air Cargo

A SYMPOSIUM

EUGENE P. THOMAS

President, National Foreign Trade Council

MONTHS before the outbreak of World War II the National Foreign Trade Council, representing the interests of those engaged in United States export and import commerce, strongly endorsed proposals for the establishment of an American transatlantic air service, and vigorously opposed the threatened interruption of the transpacific air service. In taking these positions, the Council spoke from information and authority gained by a poll of members, a resolution approved at the 1938 National Foreign Trade Convention, and assembled factual trade data.

Air service benefits to foreign traders were deemed to include: swift travel by executives, technicians, etc.; rapid delivery of articles of concentrated size and value, and more expeditious transmission of commercial mail of all sorts.

Technical advances speeded during the war will enable airlines to perform even greater services to foreign trade than was envisaged in 1939. The national interests will best be served if American enterprises handle a substantial part of the international air traffic of the future.

JOHN WHITE

President, Westinghouse Electric International

IN endeavoring to appraise (evaluate) the inevitably far-reaching effects upon the overseas activities of a widespread foreign sales organization, brought about by the spectacular wartime growth of air transportation, we must consider primarily two outstanding changes that this new "tool" will introduce into the way we conduct our business.

These two changes or trends are: (1) an infinitely more intimate integration and coordination of all foreign activities; (2) the possibility—and opportunity—of rendering improved services at reduced costs to a vastly increased number of associates and ultimate customers. With the multiplication of flights, the reduction of fares and the elimination of much "cost-travel-time," it will be feasible to maintain much more closely knit contacts between headquarters and the field; Westinghouse regional representatives, product specialists and technicians will consequently be able to establish more intimate relations with our distributors and those who use and operate our equipment. Our overseas friends and customers will, in all probability, visit us—we sincerely hope, more frequently—to the end that we may reciprocally acquire a much sounder understanding of each other's problems, policies and up-to-the-minute activities.

The age of the foreign traveler or field representative who prepared for his yearly trip through his territory as if it were an exploratory expedition into the great unknown is gone forever. Aviation has brought our factories practically into our customers front offices.

Another aspect of air transportation in which we are vitally interested is its effect upon our overseas selling system. Should economical, frequent and reliable freight flight schedules be inaugurated, that may materially revise our business procedure and that of our distributors. For instance, if such a service should be inaugurated it does not appear too visionary to imagine a material saving in the capital tied up in goods in transit and in inventories, while concurrently broadening the line of available products.

J. T. Wilson

R. M. Eastman

John White

E. P. Thomas

Cargo and Air Travel

SYMPOSIUM

The development of a dependable air freight service would increase turnover, simplify all maintenance and service problems, due to the facility of obtaining spare parts within a minimum of time, and in many cases facilitate deliveries to customers in remote regions by air freight over feeder airlines.

All this would, of course, mean lower distribution costs and improved service—benefits that would undoubtedly be passed along to the ultimate consumer of Westinghouse products.

B. K. GARDINER

Manager, England's & Perrott's, London, England

INDUSTRY in all countries of the world through the war years have been made conscious of the developments of air transportation, both in the carriage of personnel, machinery and commodities of every description.

Industry is now engaged in the transformation from war to peace and has, as quickly as possible, to make up the leeway lost in civil requirements through the war in Europe and the Pacific. It seems, therefore, the future of air transportation must be assured, as only by its use can the urgent requirements of the peoples of the world be met. Freight of all kinds for carriage by air must be carefully packed and surface transport must initiate and finally complete the air transport. These allied services of land and sea transport and freight become immediately adaptable for their new cousin in transport.

RALPH M. EASTMAN

Vice President, State Street Trust Company; Chairman, Aviation Committee, Boston Chamber of Commerce

THE experience gained during the war in in transatlantic flights should prove invaluable in peacetime. The increased overseas travel by business men to whom time is money and by many vacationists who will undoubtedly travel by air so they can spend more time abroad should mean substantial overseas air business. "Style" goods, perfumes, cosmetics, drugs, furs, plans, patterns, blueprints and many similar items will no doubt be common shipments by air.

That Boston's Logan International Airport which serves New England will play an important part in the total international air transport business is indicated by the fact that New Englanders are travel-minded and have been since the days of the square-riggers and clipper ships. Of late years, passport records show that New England residents have continued in the habit of traveling abroad in large numbers. That these people are air-minded is shown by the fact that the Boston-New York route is probably the most heavily traveled commercial air route in the world.

Foreign mail from the Boston postal district is especially heavy with the amount of first class mail sent by air increasing steadily. Many New England companies have branches abroad and air travel will provide facilities for more frequent contacts. Our great educational institutions attract students from all over the world and many of these may be expected to travel by air. The future looks bright for Boston as the *Hub of the Air Universe.*

Gene Sitterley

B. K. Gardiner

Joseph Gamburg

G. P. Reinberg

C. A. POSSON

President, George S. May Business Foundation

IN developing international air transportation, a great deal can yet be done in devising better and more economical ships and in reducing the costs of terminal operation, thereby justifying reduced air rates. Attention to technological progress, however, should not blind air company officials to the need for better promotion. Such promotion must be based on an analysis combining transportation rates, needs of the foreign market, and characteristics of the product.

Many products that are "naturals" for air transportation in international trade are being slighted because of lack of a thoroughgoing analysis to fit products to foreign markets. The airlines are in a better position than most businesses to make this analysis. It would involve a market investigation of all territories served by air, and an analysis of the characteristics of products that could be sold in these markets, including such factors as transportation charges per dollar of value, perishability, and rate of obsolescence.

The full potential of international air transport business will not be realized until as much attention is directed to marketing as is now being given to technological development.

J. T. WILSON

Manager, World Trade Division, International Business Machines Corporation

THE widespread development of the means for air transportation during the past five years, evidenced by the constant improvement of plane construction, enlarged carrying capacities, longer flying range, the creation of navigational aids and greatly expanded field facilities in all parts of the globe, will most certainly bring about an enormous utilization so far retarded by the logistics of war.

I foresee that shippers, viewing the time economy involved, will weigh carefully the important factor of speed in effecting a choice of conveyance for their merchandise. With unlimited facilities becoming available for air transportation of light and heavy shipments, a balance will be struck between the rates to be applied for surface and aerial deliveries, as urgency and the gain accruing thereby dictate.

Travel will likewise be subject to this same mental process of weighing the advantage of speed and convenience of the air routes with the slower surface facilities offered between given points.

Undoubtedly world intercommunication and trade now enjoy an opportunity never before approached. The tremendous current extention of air use augurs an unfailing commercial appreciation of its future possibilities.

GENE SITTERLEY

Publisher, World's Business and GUIA

THE war's end unquestionably marks the dawn of a new era in commercial air transportation. Although the routes of peace will not exactly be those of war, the developments in radiar, radio navigation, the advancement in engine and aircraft design, and the abundance of flight experience under all kinds of conditions and over all types of land masses has put world-wide commercial aviation in the front ranks.

In other words, this war has done for long distance over-water flying what World War I did for short-haul aviation.

More important, too, is the fact that air transportation is the instrument that has shrunk the globe. Nations today are actually so near to one another that their interdependence has given a new and very real importance to international trade—the interchange of goods, ideas and money so vital to the prosperity and peace of the entire world.

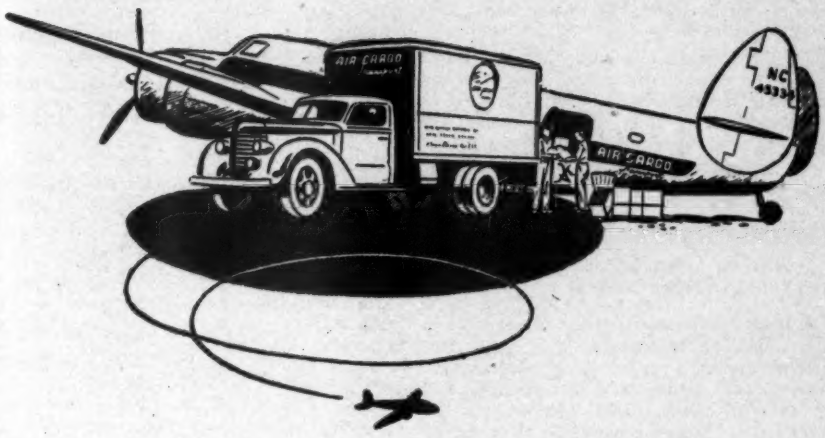
GEORGE P. REINBERG

Director, International Division, White Laboratories, Inc.

PLEASE bear in mind that while we are manufacturers of pharmaceuticals, I feel that each individual manufacturer has his own particular policy and method of operations in foreign fields and that, therefore, the ideas of some of them may vary from mine, which are based primarily on our own policy, and secondarily on a general acquaintance with the method of operations of other firms in our line of industry.

As to air travel, undoubtedly this will be of tremendous help to all of us, cutting short the time of executives required to visit foreign markets for study and consultations with their local subsidiaries or distributors. It can also be tremendously helpful for our salesmen by cutting down the time required for their regular coverages of their territories. As cost of air travel will be reduced, I am sure you will find more and more companies taking advantage of this fast method of transportation.

Regarding cargo air transportation, I personally feel that since we manufacture in some countries and distribute our products in all countries through exclusive distributors who purchase in large quantities and who are required to carry ample stocks of our products at all times, and which are being and can continue to be replenished regularly by regular ocean freight transportation, as I see it, therefore, the need for air cargo transportation would only arise in special or emergency



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AIR-CARGO Transport — WHEN TIME COUNTS A-C-T

situations. Of course, air transportation will be used particularly for sending sample shipments of new products to the distributors and for other similar special purposes when time is of the essence.

This is my present opinion, but of course much will depend on what reduction in charges for air cargo can be put through in the future and if these can be made low enough, then it would be possible for us to use air cargo transportation more generally than I can foresee at present.

EGYDIO DA CAMARA SOUZA

Director, Brazilian Government Trade Bureau

FOR Brazil, perhaps more than any country in the world, air transportation is vital. Her vast territory is not yet completely linked with a network of highways and railroads, and there are still many places necessary to the country's development without good or rather practical fast transportation.

This problem has been solved largely by air service, not only for passengers, but also, to a great extent, for cargo.

Brazil, I can say without hesitation, offers the greatest open field for the development of air traffic. Her commercial aviation has grown amazingly during the past years. It now tops other South American nations in the number of aircraft, route miles, miles flown, and passenger, cargo and mail traffic.

The total extent of her airlines has jumped from 14,637 miles in 1930 to 34,231 miles in 1944. The number of passengers carried increased from 4,667 in 1930 to 244,516 in 1944. Freight carried rose from 21,133 pounds to 7,632,255 pounds, and baggage from 51,401 pounds to 8,870,358 pounds. Mail transportation jumped from 70,281 pounds to 1,703,000 pounds.

JOSEPH GAMBURG

General Manager, Air Clearance Association, Inc.

THE future of commercial aviation is assured. Hope and fancy have been realized; superlatives, generously employed, have been justified. Henceforth, the rate of progress, more than structural development, should excite expectation.

Air travel, offering speed and comfort and holding vast appeal for the adventurous, presents mainly the problem of reducing costs. That problem is close to adequate solution. In the field of international air cargo, however, difficulties are more complex.

For a time to come, most air shipments will consist of the single package containing high value, low weight goods, with perishables, samples and emergency equipment as principal exceptions. The payload will be built of small lots, and successful operation will depend greatly on economical accumulation of such small lots from scattered points of origin. Unless the airlines go afield in their enterprise, this condition points to increased demand on the services of the foreign freight forwarder.

After importation, the custom house broker and forwarder, specially skilled with regard to the peculiarities of air cargo, will be indispensable to sustained acceleration throughout the processes of customs clearance and distribution of individual shipments to their respective destinations. Particular devotion by customhouse brokers and foreign freight forwarders to the needs of air cargo may be expected. Air transportation has allies obedient to its command.

Transoceanic Blimps Now a Reality

DETAILS of a new chapter in aviation history—the first flight by blimps across the Atlantic—have been revealed.

The feat was accomplished by a squadron of six standard Navy patrol blimps in June, 1944, when they were flown from this country to the Mediterranean to extend to the European area the work of anti-submarine patrol and convey escort in which they had been so successful in United States coastal and other waters. Two additional ships later established a non-stop distance record for blimps by flying a 1,900-mile non-stop leg in reaching Africa by another route.

Until recently, the only public mention in this country of operation of blimps in the Mediterranean area was when a United States Navy airship participated in air coverage for the late President Roosevelt's cruiser on his return from the Yalta conference. However, in her regular German broadcast beamed to North Africa, the propagandist, Axis Sally, announced the presence of the blimps the day after their arrival.

E. BURKE WILFORD—The designer of the Gyrocopter with a model of the WT-2280, 22-place rotor aircraft for short-haul transportation.

Wilford Gyrocopter Pointed Up As "The DC-3 of Motor Wing Aircraft"

ONE way of beginning this story is to quote E. Burke Wilford himself:

"Because of the reliable control system at slow speed and the fact that rotors ride through air bumps with less effect on the passengers than wings do, there may be a phase where the helicopter will enter into special missions for short-haul transport. Also, some day it may be possible to combine the helicopter with the airplane, thus giving safety, comfort and good control at slow speeds, and the efficiency and high-speed operation of the airplane for long distances. This is probably many years off scientifically, but the next logical step is the building of helicopters of sufficient size to make short-haul air transportation useful and cheap enough so that within the next 10 years at least every adult in our population may make one air trip per year instead of once every 15 years."

Which leads to Wilford's *Gyrocopter*—the WT-2280—"the DC-3 of rotor wing aircraft." A 22-place transport, it is designed to seat 12 passengers in the front and eight passengers in the rear of engine compartments, plus a crew of two. (Wilford would have former Wasps for co-pilots doubling as ticket collectors and hostesses.)

The WT-22-80's loaded weight will be 23,000 pounds, and empty weight 17,000 pounds. Payload will be 4,500 pounds and useful load 6,000 pounds. It will carry 1,500 pounds' gas and oil, giving the aircraft a three-hour range. According to Wilford, the *Gyrocopter* will have a guaranteed cruising speed of 120 miles an hour and a maximum speed of 150 miles an hour.

"With the coming of transoceanic and transcontinental flying without jet-assisted take-off," states Wilford, "the length of runways required for four-motored equipment would need to average 5,000 feet; therefore, even in the very largest centers of population, the airports are not getting closer to one's office or home, but are going farther out.

"The new Idlewild Airport is at least 15 minutes farther from the populated centers than LaGuardia, and LaGuardia was inconvenient. Something must be done to bring about a new conception of the requirements of short-haul flying. The steps should be to fly from city centers to surrounding airports. This would develop into direct service to and from city centers when the cities are not more than 200 miles apart.

"This requires a whole new conception of air transportation, also some close cooperation between the present ground transportation companies and the airlines. Possibly a new group of air transportation companies will have to be formed operating in each major populated center before this will become a reality, with cooperation of the airlines, because the company using helicopters exclusively will overcome the greatest difficulty in air transportation for the masses."

AIRDOM

By Richard Malkin

(Trade Mark)

HOOSIER ASSIGNMENT

FREEMAN FIELD, SEYMOUR, INDIANA—Flying down here in the Army C-47 you're most of the time at 11,000 feet. The heavy clouds, thousands of feet thick, lay underneath the belly of your plane, while a 30-mile headwind smacks its nose. There is passable visibility from Newark Airport to the outskirts of Altoona, but from that point on the craft goes through on instruments only.

The dozen or so newspaper, magazine, and radio men on board the transport move from seat to seat, peering out through the small squares of windows, poking curious fingers through the round airholes, and complaining about the cold. One chap, who had made the mistake of wearing his tropical, prays loudly for the comforts—particularly the soothing temperature—of a commercial airliner. Everyone says he feels like a cup of coffee or a snorter. And no one denies he can devour a steer.

You laugh at the queer wording of Paragraph Nine in the Instructions to Passengers in Army Aircraft: "The use of indulgence in intoxicating liquors or beverages is prohibited in Army aircraft and no person under the influence of intoxicating liquor will be permitted abroad."

To while away the time you start inventing a crossword puzzle. Pretty soon Gurney Williams of *Collier's* takes the seat next to you and shares the racking of brains for a couple of hours. But, together, you manage to get that elusive seven-letter word.

You nose down through the overcast somewhere over Indiana and fly at low altitude until Freeman Field opens itself in the distance like a misty welcoming angel. It's a new field, having been activated only last June. None of the men has ever been here before. Hence, the first-glance exclamations: "Clean as a whistle!" . . . "Swell layout!" . . . "Not an obstruction in sight!" . . . "A beaut'!"

At chow there is a general exchange of information on Freeman Field. Your number has multiplied several-fold with the arrival of a few more press planes.

You learn that Freeman Field was activated by the Air Technical Service Command "to serve as an installation for collecting and evaluating captured enemy aircraft and equipment." Before General Henry H. Arnold had ordered the establishment of a separate organization to handle the important job, the task had fallen to the ATCO's Engineering Division, Technical Data Laboratory. The work, however, had been carried on in a number of locations, necessitating constant transferrals of information. It was all too clear that the best degree of efficiency lay in centralization.

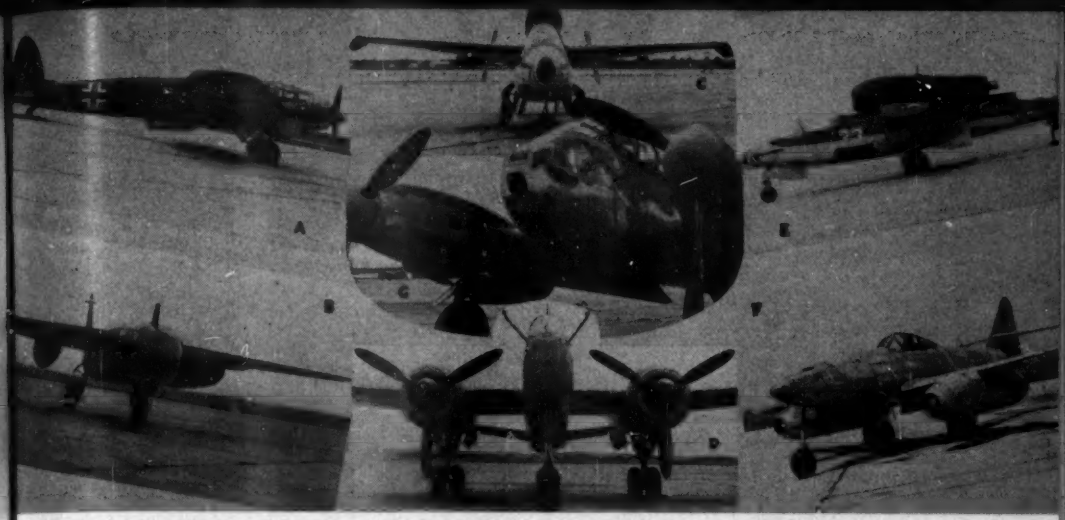
Visualize Freeman Field as the nucleus of a vast network of technical teams scouring the various theaters of operations, and ferreting out the long-hidden secrets of the Axis. All these converge on the new Indiana field nestling among the neat, peaceful acres of Indiana farmland. The end of the war has not knocked the props from under the newest of ATSC installations. Quite the contrary—for "business" is and will be done on an increaslingly grander scale.

You board a bus and are whisked away to one of the hangars. (The New York press delegation recognizes the bus at once as of hometown vintage, and makes certain that the non-New Yorkers know about it.)

It's one feeling seeing with one wide sweep of your eyes most of the aircraft and air missiles that for years had been familiar names in war correspondents' stories; it's another feeling touching these flying instruments of death, fingering their parts, probing dark corners, reaching into a cockpit of a fighter, climbing into the tubular bowels of a transport, and discussing relative qualities on a *Reichskreuz*-marked wing or leaning against a swastika-daubed tail unit.

You're taken in by the Horten III tailless glider—a flying wing. It was back in 1930 that the Horten brothers began working on the design hoping to get backing from the German Government; but they were turned down on the project, and no headway was made for more than a decade. In the year America entered the Second World War, a Nazi high official came across the magazine picture of a Northrup flying wing. Interest heightened by the Northrup development, the Hortens were given the green light for their all-wood, one-place, tailless motorless aircraft.

The Horten 229 is no less a curiosity, pos-



ALLES KAPULT—Some of the captured German planes viewed at Freeman Field. A—Heinkel 111, an early six-place bomber first used by the Nazis in the Spanish civil war. It can travel at 225 miles an hour. B—Arado 234, one of Hitler's vaunted secret weapons. A jet-propelled bomber, it is capable of speeds up to 470 miles an hour. C—The jet-propelled Heinkel 162, popularly known in Germany as the Volksjaeger. It can reach 19,700 feet in six minutes where it will cruise at 522 miles an hour. D—Heinkel 219, capable of 385 miles per hour at 21,000 feet, which was used as a night fighter-bomber in the last days of the European war. E—Another view of the Volksjaeger. F—Messerschmitt 262A-1, jet-propelled fighter flown in demonstration by Colonel Harold Watson. G—Two-place fighter-bomber, the Messerschmitt 410, which develops a speed of 390 miles per hour at 22,000 feet.

sessing all the elements of fantastic invention. A twin-jet fighter, it resembles a turtle which might have prowled the earth when dinosaurian species was the order of the day. Fuel is carried in wings made entirely of wood.

And then there's the Bachem BP-20 *Natter* (*Viper*, in English—and that ain't kiddin'). Conceived in August of last year and ready for flight tests three months later, the BP-20 showed up as a rocket-driven interceptor launched with a pilot from a vertical ramp. It is capable of climbing at the rate of over 37,000 feet per minute, and attain a high speed of 620 miles an hour. Maximum altitude is set at 12,000 feet.

Following attack with 24 rocket projectiles of 7.3 calibre, the pilot is ejected from the *Viper* and dropped by parachute. Unwilling to sacrifice the expensive rocket unit with the simple wooden fuselage, German engineers provided for the falling off of the interceptor's tail, thus permitting the power device to 'chute to the ground. A fraction less than 20½ feet long and a wingspan of 13 feet, the airframe is reported to require only 600 man-hours for construction.

The preliminary visit is over and you meet Lieutenant Colonel Francis S. Gabreski, the top living Army Air Force ace, and First Lieutenant Spiros N. Pissanos, famous as the Flying Greek. You chat a while and later you remark to some of your colleagues how pleasant and unaffected they are. There is general puzzlement over "Steve" Pissanos' rank, some holding out that he should be a major at least.

Colonel Gabreski, who has 400 combat hours, 166 missions, and 31 enemy planes to his credit, wears Polish Air Force wings as well as those of the AAF; the Distinguished Service Cross; the Silver Star with cluster; the Distinguished Flying Cross with nine clusters; the French Legion of Honor; the Croix de Guerre with palm; the Polish Cross of Valor; the Air Medal with four clusters; the Bronze Star; the Pacific Theater Ribbon with one battle star; the European Theater Ribbon with battle star and seven overseas bars. At the present time he is atest pilot at Wright Field.

Lieutenant Pissanos, who is a native of Athens, Greece, where his parents still live, joined the Royal Air Force in 1941, serving for a year in the dashing, deadly Eagle Squadron of pre-Pearl Harbor days. Transferred to the AAF in 1942, he flew on 106 missions and knocked down six enemy planes. The Flying Greek was shot down over France; and, managing to escape the eager clutches of the Nazis, continued his war against the Jerries with the French underground. He wears the Distinguished Flying Cross with two clusters, the Air Medal with three clusters, the Purple Heart, and the Presidential Unit Citation with cluster. Like Gabreski, Pisanos is test piloting at Wright Field.

Next day you join the others on the field to witness some demonstrations of a few flyable German aircraft. The sun is unsuccessfully trying to break through, but the officers assure you that the flights will be made as planned. A Messerschmitt 262A-1 jet fighter warms up and presently moves past you to the runway. You mutter a bit as you are caught in the hot blast.

"Smells like the stove in our BOQ," a reporter remarks.

"Certainly not like Evening in Paris," you say.

A few minutes later, the test pilot, Colonel Harold Watson, zips the 262 into the air, its two jet engines leaving a faint trail behind it. Gathering speed, the Messerschmitt plunges through space and then makes a wide turn to get back over the field. The plane is capable of developing a level flight speed of between 515 and 530 miles an hour, but it's easy to see that Colonel Watson is not pushing it that high. He comes in low, directly over you, and this time you hear the eerie whistle which you had expected and been waiting for all along.

Cameras are clicking all over the place and some of the aviation writers are comparing the German jet plane with the Lockheed P-80. Watson completes another round trip, reaching a speed of 420 miles an hour. He comes in amid the applause of the press. Later you watch demonstration flights of a Focke-Wulf 190, the Nazis' outstanding fighter plane, by Major Harold Mertzberger; and of a Henschel 129, first used operationally as the counterpart of the Russian *Stormovik*, by Captain Ray White.

It's been a good show. You take a last look at some of the other equipment: Junkers, Heinkels, an Arado, and a Macchi. A captain with an array of ribbons and battle stars bumps your shoulder.

"I like them better on the ground than in the air," he says, and then, as an afterthought: "Maybe we'll keep them there this time."

STRAIGHT TALK

NEW YORK—Meeting a general is one thing and cornering a half-dozen of them with a single swoop is another. Truth is, they aren't cornered. It is through the good offices of the Wings Club that the press is able to interview some of America's great in the Yale Club.

Sitting in a semi-circle at one end of a long table are General Carl Spaatz, Commanding General, Strategic Air Forces of the Pacific; Lieutenant General James H. Doolittle, Commanding General Eighth Air Force; Major General Curtis E. LeMay and Major General Emmett O'Donnell, who flew in two of the three planes which made the historic nonstop flight from Japan to the United States; Major General Fred L. Anderson, Assistant Chief of Staff-3; and Brigadier General William E. Hall, Deputy Assistant Chief of Staff-1. Also on hand is Captain Kermit K. Beahan, a member of General O'Donnell's Japan-United States plane, who dropped the first atomic bomb.

The newspaper reporters are interested in General Spaatz's reaction to Major General McK. Giles' recent statement on the need for a hundred years' occupation of Japan. (General Giles, who is in Cairo, led the third plane on the hop from Japan.) Admitting that the democratization of Nippon is "not an overnight job," Spaatz nevertheless believes America will be able to keep the Japs under its thumb.

With strategic airports established, says LeMay, we would be able to move planes quickly to any threatened place in the world. What about the Pacific air routes? Are they feasible for commercial operation? LeMay thinks so, and adds that "they shouldn't be worse than those over the North Atlantic." Over-water distance from Japan isn't too much, he points out. Flights can be made by short

PLENTY OF STARS—Five of the six generals interviewed at the Wings Club: (left to right) Brig. Gen. William E. Hall; Brig. Gen. Emmett O'Donnell; Lt. Gen. James H. Doolittle; Gen. Carl Spaatz; Maj. Gen. Curtis E. LeMay.

hops over the sea. The three *Superfortresses* which flew nonstop from the airport at Hokkaido followed almost exactly the Great Circle course.

Someone asks whether the atom bomb will have any effect on air power? Not immediately, is the opinion of Spaatz. General Anderson adds that the atomic bomb is no good without air supremacy. He stresses that this is the most significant point on the use of the atomic bomb that has not been discussed.

You finally get your question in, and ask Spaatz whether United States-Japan commercial flights would be feasible in the near future. The four-star general replies at once that he can see no good reason why the commercial airlines cannot make use of the routes used by the Air Transport Command. Doolittle joins the conversation to say that in his opinion the route followed by LeMay, Giles, and O'Donnell will be the most widely used.

"What about Japan's airports?" you ask.

Poor, says LeMay. There was only one in all of Japan—the one in Hokkaido—that was capable of accommodating a plane of the size and weight of a B-29, "and even that field would break up under constant usage." Japanese standards for airports are considerably lower than ours, he points out.

"Do Jap transports ever take to the air?"

Again LeMay replies, and this time it's "Occasionally." He explains that a flight necessarily depends upon special permission from General MacArthur.*

The conversation swerves to air power once more. Spaatz urges exploitation of all possibilities of air power—rockets, jets, supersonic speeds, etc.—and Doolittle implements this by calling for the maintenance of military establishments for national defense. At this point LeMay observes that the AAF has been working constantly towards an all-weather air force. He mentions the fact that a Jap city was burned down while a thunderstorm was at its height, and that even individual factories were successfully bombed when they couldn't be seen from the air.

All the generals are agreed on one important point: that, through research and development, improvement of flying equipment and facilities will not only raise the already high standard of our air forces, but of our commercial airlines as well.

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* Two days after the interview General MacArthur gave the Japanese permission to operate 27 non-combat planes for courier and transport service within Japan.

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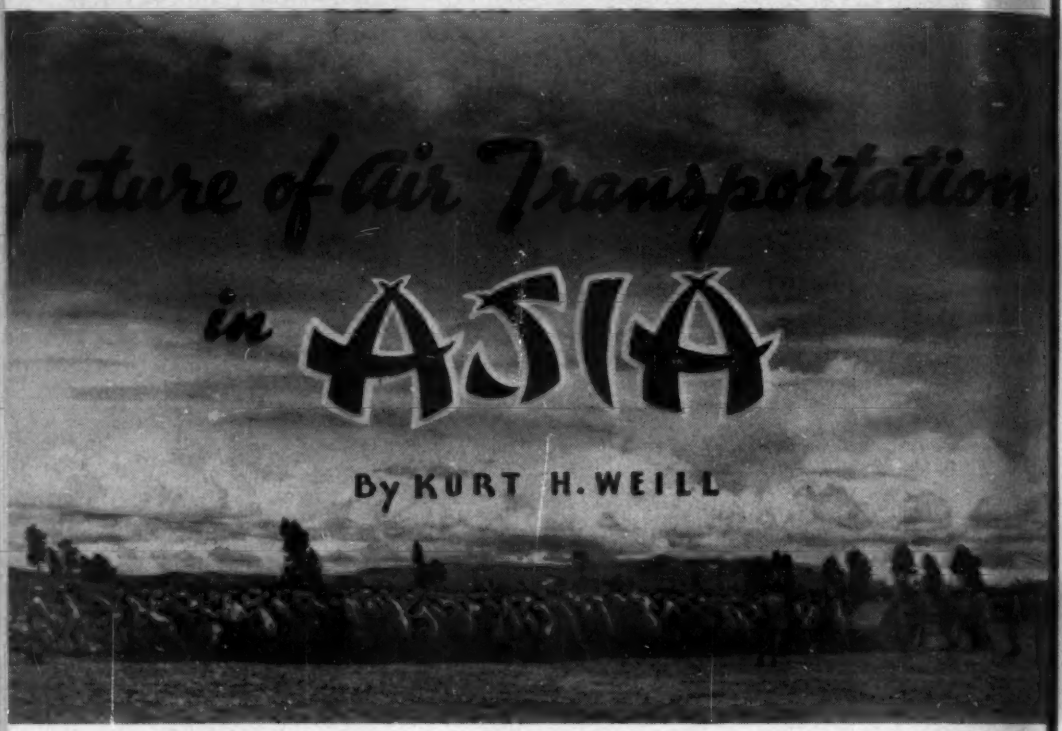


SWEAT OF THE BROW—Hundreds of Chinese laborers dragging huge rollers to pack down an airport which is to accommodate heavy United States planes.

AIR TRANSPORTATION is destined to play a great role in Asia. There, for the first and probably the last time, air communications will open up enormous areas for an entirely new technical civilization and for markets compared to which those now known will seem diminutive.

Means of communication largely determine the form of economic life in any country. In the United States the railways have influenced the economy since the beginning to such a degree that today the distribution of industry, the location of centers of commerce and even the competitive power of certain regions are governed by existing railway lines and their policies on rates. In the same way, the development of shipping lanes has conditioned the importance of the British Isles for the economy of the European countries.

The great land masses of the Asiatic continent—except for the seacoasts and the great river areas—cannot be developed by waterborne traffic. Nor do we expect railway lines to contribute to any important extent to the development of the interior, except in India. When the trans-Iranian railway was built about 1930, one mile of track cost $100,000 on the average. Such enormous investments cannot be amortized and upkeep be paid unless very heavy traffic brings down rates to, say, one to two cents per ton mile. Nowhere in Asia can such traffic be expected for long-distance transport.

Modern air services alone can work with relatively small investments to begin with, can quickly expand as development requires, are flexible to change their lines and networks if necessary. They can operate so cheaply that they can support themselves in the first stage on the lowest economic level of a country, when railroads would be choked by the capital service for their large investments.

Even before the war, there was general interest among the western nations in Asiatic airlines, but three factors then retarded expansion. These factors also threaten to affect the vast postwar possibilities for Asiatic airlines.

One factor is power politics. Among the non-Asiatic nations flying over Asiatic territories the most important were: Soviet Russia, Britain, France, Holland, Germany and the United States.

In Asia the Soviet Union, like the United States in the Western Hemisphere, is the "Colossus of the North." Rightly or wrongly it is suspected by the smaller and less powerful states of seeking political advantage from airborne traffic over their territory, not to speak of military footholds and information.

Britain, Holland and France have colonial possessions in Asia. For this reason they will be resented and handicapped in dealing with Asiatic air concessions.

Only the Germans before 1933 and the Americans had a clean political slate. With the Germans out of the game, the United States will have a unique position when negotiating for and operating Asiatic air concessions. Now that Japan is finally beaten, the military and transport performances of American aviation in Asiatic countries have created an enormous prestige. The demonstrated lack of territorial aspirations in Asia should pave the way for American air commerce.

The second factor detrimental to "Western" air interests in Asia is the tendency of foreign governments and airline companies to cultivate airlines only from their own countries to Asia, and to neglect air transportation *in the interior.*

For the colonial powers it was natural to fly to their colonies by the shortest route, to touch only the fringes of the countries along the way, and to provide there only those ground facilities which were indispensable for landings, meteorological observation and transmission of flight information.

The maps showing new routes for which American airline companies have applied under the Civil Aeronautics Act very clearly disclose a distinct interest in lines from this country to Asia westward across the Pacific and eastward across the Atlantic and Europe. But these projected lines again just touch the outlying districts of the Asiatic countries. With very few exceptions they leave the "heartland" of Asia alone.

Considering such an attitude it is not surprising that not much cooperation of Asiatic governments has been forthcoming. Continental Asiatic governments have nothing to expect from reciprocity agreements by the colonial powers among themselves. They want airlines across their countries routed so that their own economy will benefit, and they will not cooperate if their interests are disregarded.

Before the war Turkey and Iran created considerable inconvenience to the European airlines flying to their Asiatic colonies. The Chicago air convention, if and when ratified by all countries, will prevent Asiatic governments from barring transit airlines across their countries. But lack of full cooperation from local authorities can be a most serious handicap for the smooth operation of an airline. Nobody who has had experience in Asia will provoke such a state of affairs. This alone should make American air-carriers think of a different routing of their prospective lines. Consideration of native internal traffic will make their daily work in these countries much easier and more pleasant. Furthermore, in the long run, they will be of great benefit to their own operations and to American business in general. For, as the purchasing power of the Asiatic countries grows, they will need an expanded and a more profitable type of air transportation.

More difficult but by no means insurmountable to aggressive and pioneering American business minds is the last of the three fundamental factors of future air activity in Asia.

The war has speeded up the development of political and economic self-assertion in Asia. The people of that continent are no longer willing to barter away concessions to foreigners for a cash consideration. They realize that they need foreign help, financial as well as technical, and they are prepared to reward the foreigners; but only in such a way that their own country and people will benefit from any development on their territory. Only those foreigners who clearly recognize these conditions can look forward to a profitable business in Asia. Foreigners must be willing to take natives of the Asiatic countries as financial, technical and operative partners, to train them in the use of this new form of transportation, and to share any profits and other future benefits with them.

This will be a shock to many American business men. As a result of the typical development of capitalistic enterprise in this country, of legislation restricting certain investments and of other limitations stemming from the Civil Aeronautics Act, the adaptation of American air commerce to Asia's requirements seems to be difficult. There will also be considerable suspicion of the trend towards the singular form of economic life developed all over Asia. This can best be described as a mixture of state capitalism and state socialism for all larger projects, with private enterprise for all other business not so big as to be beyond the weak capacity of private capital. But the record shows that

The Author

Kurt H. Weill, engineer and pilot, founded and operated for five years the airline system in Iran, reaching to Iraq, Soviet Russia, and Afghanistan. Mr. Weill is adviser to the Institute for Asiatic Economics of the School for Asiatic Studies. This article originally appeared in *Asia and the Americas.*

SUNDERLAND ON THE BRAHMAPUTRA
—The picture shows a Sunderland being towed to its moorings after a landing on the Brahmaputra River, India.

combinations of native and foreign investments are the best guarantee for the foreigner that his investment will be safeguarded and that he can expect profits for a long future.

Indeed, the prospects are so favorable, the potential markets so enormous and the possible business in air transportation and affiliated fields so large and long-lasting that the risks to be taken and the change of attitude required seem small difficulties. Experience of Americans with the China National Aviation Corporation shows that enterprise, resourcefulness and understanding of local "atmosphere" can easily overcome these obstacles and create a very favorable business outlook.

There is one more important aspect of future air transportation in Asia. The general standard of living is very low and the population as a whole is poor. The amounts of money now available for transportation are relatively small and concentrated. In the face of such a situation it may seem attractive to ask for government subsidies. This, however, is a most dangerous thought. Everywhere, subsidies are demoralizing. In poor countries, furthermore, they would never be sufficient. Nevertheless they would appear as a heavy strain on the government budget. Therefore, they would create public misgivings, induce government to interfere with a heavy hand, and would provide dishonest officials with a tool for unpleasant "squeeze."

Rather, the air carrier should consider it his task, not only to reduce his expenses and improve his load factor, but also to help develop the economy of the Asiatic countries as a whole. This is the most attractive aspect of air operation in Asia and, as experience shows, it is the most promising. Space does not permit details of such a plan. But it has been proved that, even in the poorest Asiatic countries, the supporting economic structure could be strengthened so quickly that by the third year of entirely unsubsidized operation an air transport system can begin to support itself handsomely, with success growing rapidly after the third year.

This, of course, requires a determined economic policy, imagination and the ability to cut loose from attitudes, experiences and methods suitable in the United States. In Asia, in nearly all places air transportation will have to compete with only the most primitive carriers. Therefore none of the luxuries or even the comfort indispensable to Americans need to be considered either on the ground or in the air. Even speed has an entirely different meaning. Surface transportation is so slow and hazardous that even the slowest plane has an enormous advantage. With few exceptions and for a long time to come, nobody in Asia will pay anything for speed. High-speed planes may enter into the calculations of the operator only because he will need fewer planes to make a given number of runs per day between two points. Less equipment may make transport cheaper, and help him to undersell ground competitors. Thus we have the strange result that speed may enable the operator not to charge higher rates but, on the contrary, to offer lower ones. This is only one example of how one has to change one's attitude when dealing with conditions in Asia.

Instead of trying to use equipment suitable for America or for international lines, after an initial trial period it will become imperative and profitable to design a family of two to three new transport airplanes on new specifications. Except in a few cases, surplus war planes will not be found suitable or economical.

This new need should be gratifying for the American aircraft industry. Our aircraft industry will consider itself lucky indeed if after the end of the war it can find enough orders from all sources to keep 10 percent of its present capacity busy. Under such circumstances it should be highly attractive to design new standard planes for economically undeveloped countries. These planes should be easy to build and to service as well as to repair with local means and partly local personnel. They should have short take-off and landing runs even at higher elevations, and low speed but excellent climb and ceiling. They should be sturdy and self-contained without needing to be housed in hangars. Finally, they should be easily accessible for loading, inspection and servicing in order to assure a high factor of usage. Planes built to such specifications can be sold in mounting quantities for the next ten years without

fear of obsolescence. Because of the new design of the planes, no airfields with expensive concrete runways should be needed. This is the only way to make air transportation in Asia the backbone of the transportation system. With such planes it will be possible to compete with the rates of surface carriers.

For the inexperienced it is surprising how expensive transportation by camel, mule or human bearer turns out to be—not to speak of the severe limitations on weight and bulk per single load which these carriers impose. When Bulolo Goldfields, Ltd., in New Guinea, replaced their native bearer caravans with airplanes, the air transport company made 1,000 percent profit in the first year of operations. It also made it possible for the first time to transport large dredging and mining equipment, prefabricated houses, cows and other loads to the fields which were necessary to profitable mining operations. The loads had been much too heavy or too bulky for any other means of transportation through the jungle and over the mountains.

In Iran special planes carried the corpses of pious Moslems to the sacred burying places in a round trip of two days at a cheaper rate than camel caravans which make a hazardous four-week trip.

These are but two examples of the possibilities of air transportation in undeveloped countries and of the unusual financial results of unusual circumstances.

Road traffic with trucks will be a powerful competitor as long as governments in Asia continue to build roads out of general state income, while air transport has to pay the same prices for fuel as ground carriers. It is not generally recognized that an airplane flies because it builds continuously its supporting road in the air and destroys it after having used it once, much as a military tank rides on a soft surface by using its tracks with which—so to speak—it builds a road in front of its wheels and lifts it again after having passed over it. For this road-building in the air a plane spends a considerable part of its fuel. It would, therefore, be wise to negotiate in Asiatic air concessions a clause which requires the government concerned to finance road-building from some tax on trucks or their fuel, from which airplane fuel would be exempted. Such provisions will create sound competition.

Careful consideration has to be given to the selection and training of American personnel to be sent out to Asia. On this selection will depend to a great degree the success or failure of the whole enterprise. The men sent have not only to be highly skilled and adaptable but also persons with tact and with respect for the old cultures of Asia. They have to understand that they are being sent out not to teach the Asiatics the American way of life, but to cooperate with them, with the usual give and take. They are not to be missionaries but ambassadors of good will.

The same care has to be applied in the selection of native personnel to be trained for the air service as pilots, technical and operational workers or agents. Understanding of the problems and consideration of the background will save grave disappointments, simplify operations and raise the prestige of the foreign company. The type of salesmanship required in these countries is entirely different from the approach usually considered necessary—in the United States.

This article refers mainly to air service in the interior of the noncolonial countries in Asia, that is, the Arabian states, Turkey, Iran, Afghanistan and China. Conditions in India, the Dutch East Indies, Indo-China, Burma and Japan cannot be dealt with until their final political status has been determined.

Whatever the future cooperation between the great powers in Asia, there will be conflicts of interest which will have to be ironed out from time to time. In expectation of such conflicts of interest, an all-Asiatic trunk line connecting the noncolonial countries should be considered. Such a line could be flown from the Mediterranean through the Arab countries, Iran and Afghanistan into the westernmost Chinese province of Sinkiang.

It is not generally known—and most maps do not show it—that Afghanistan, with a slim funnel-like appendix protruding due east, has a direct, if short, common border with Sinkiang and therefore with China. It is true that the way through that funnel is narrow and leads over one of the worst mountain ranges in the world, the Pamir. The Wakhan Pass, the lowest passage over the "roof of the world," is 17,000 feet high. It took 10 years to prepare the first flight over this route in 1937. But modern planes would encounter no serious difficulties in the flight over Hindu Kush and Pamir. American airmen in their flights from India "over the Hump" have proved that.

Such a trunk line would connect with China through one of its most important provinces. It would be considerably shorter than a trunk line through India. But its main attraction is political: it would run its entire length *between* British and Russian territory without ever touching either. At its western end on the Mediterranean it could be linked up with American lines coming across the Atlantic. At the Pacific Coast it would meet American air connections from California. Thus it would be the final link in a world-girdling American air service which would cooperate in friendly ways with all countries but could avoid entanglement with great powers and would not depend on deals in the sphere of power politics.

TACA Sets Precedent by Granting Brokerage of 7½% to Forwarders

Text of Forwarders' Memorandum To International Airline Operators

HISTORY was made in the field of international air transportation when it was announced by Wesley J. Wilson, traffic manager of TACA Airways Agency in New York, that the airline has granted recognition to the foreign freight forwarder, and will pay seven-and-one-half percent brokerage on all international air cargo shipments. Wilson stated that brokerage will be paid only to foreign freight forwarders recognized and licensed by the airline.

This move by TACA was the first to be taken by any air carrier in America. Prior to the war, it was customary for the airlines of Europe to pay brokerage, but this practice was not existent at any time in the United States. Wilson paid tribute to "the untiring and unselfish efforts of John F. Budd, chairman of the Aviation Section of the New York Board of Trade, in bringing the problem out in the open, and facilitating the final decicion by the TACA."

Wesley J. Wilson

TACA's decision to pay brokerage won the immediate favorable reaction of Fred Bennett, president of the New York Foreign Freight Forwarders and Brokers Association. He hailed the precedent-establishing move by the airline as "a tremendous step forward for the entire shipping industry" and predicted immediate satisfactory results.

Included in the airline's arrangements are the services of TACA Airways Agency through the following companies: TACA Airways S. A. (Panama); Transportes Aereos Centro Americanos (Honduras); TACA S. A. (El Salvador); TACA de Nicaragua; TACA de Costa Rica; TACA de Mexico; TACA de Colombia; TACA de Venezuela; Aerovias Brazil; Aerovias Paraguayas; Aerovias Argentinas.

The companies are represented in the United States by TACA Airways Agency, 630 Fifth Avenue, New York. These serve through the Miami international gateway, Brazil, British Honduras, Colombia, Costa Rica, Honduras, Nicaragua, Panama, Venezuela, Cuba, Dominican Republic, Trinidad, with local service in Colombia and Venezuela.

Meanwhile, AIR TRANSPORTATION has secured the text of the memorandum on the "foreign freight forwarders' participation in foreign shipments transported by air," presented by Mr. Bennett through the Aviation Section to the International Air Transport Association conference held this month in Montreal. A document of extreme importance, it follows in full:

"The eyes of the American business man are directed to the measures which are being taken in the development of our international relations. The policy of isolationism must fall before the ever-increasing recognition of the interdependence of nations and the 'geographical nearness' of continents brought about through the amazing progress in transportation. Development of the railroads and steamers has brought the peoples of the world in more frequent touch through exchange of business men, educators, scientists, labor, as well as closer diplomatic exchanges. The reduction in time and the increase in convenience in travel to seaport and the faster and more luxurious liners plying the seas, have been substantial contributions in the last decade to the bridging of the oceans separating the continents.

"Progress from now on will be greater. The foundations have been laid and experience points the way to improvements in methods and machines which make possible development on a faster tempo. And, now, air transportation enters the foreign field with an experience gained through the war years—an experience that enables the air companies to undertake both passenger and freight carriage on a substantial scale.

"Those of us who have been engaged in foreign trade welcome the added importance of air transportation because, fundamentally, we believe that the future of our country and

the peace of the world, depend upon increased trade relations with other countries. We would point out, however, that in entering the field of foreign trade, you assume a responsibility that does not exist in domestic trade operations. Foreign trade, for any country, involves the coordination of various services to a degree that a product sold abroad is handled throughout with a minimum of delay and inconvenience, and at an expense consistent with the nature of the article carried. That does not mean merely the cost of transportation. It does mean the proper utilization of all services which enter into a foreign trade transaction.

"It is this most important function of a 'foreign freight forwarder' that we would emphasize more than even his ability as a selling medium for your own services. The designation 'foreign freight forwarder' inadequately describes the part played by these business men in a foreign trade transaction. He is, in effect, the adviser and manager of the exporter he represents in the distribution of his client's product, when ready for delivery. Insurance, banking formalities, storage and documentation are to be added to his services in instructing as to proper routing in transportation, both domestic and foreign. He is 'the exporter.'

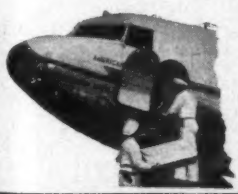
"Some exporters do not employ a foreign freight forwarder, but the percentage of exporters have found it expedient to do so, and the volume of freight which passes through the hands of a foreign freight forwarder establishes the importance of this industry in the development of foreign trade. The foreign freight forwarder will not let down his client by advising a routing contrary to his client's interests because he is favorably inclined toward one transportation company, but neither will he let down the transportation company by failing to instruct the company on what is necessary to gain his client's business and confidence.

"The dual character of the foreign freight forwarder is known and its value demonstrated in the existence of this class of operator back to the days of sailing ships. His intermediation in a shipment is welcomed by steamship operators because it means less work and expense for the operator. The foreign freight forwarder knows what to do to cause a shipment to move smoothly—*and does it!* Of course, the exporter knows that too; otherwise the foreign freight forwarder wouldn't be employed. Where a foreign freight forwarder represents a number of clients, the work of the steamship operators is reduced by ability to deal with a number of exporters through one representative, usually located where it is most convenient for the operator to meet him.

"The Congress of the United States considered the foreign freight forwarder as of sufficient importance to the foreign trade of the United States to enact legislation for his protection and preservation through the troublesome years of the war for use in the post-war era.

"Because of his somewhat dual capacity, the foreign freight forwarder receives his compensation from the ocean carrier as well as from the exporter he represents. This practice has existed for so long a period of time that "the mind of man runneth not to the contrary." The foreign freight forwarder is, without doubt, an essential link in a foreign trade transaction. His is the outstanding business that provides continuity and unity to a shipment. He may, in some instances, represent the consignee abroad instead of the shipper, or by mutual agreement, represent both. He is directly interested that the shipment is handled in the best manner possible. In that attitude, he is the representative of all persons interested in the shipment, and, in fact, because there is no similar agency available, is definitely needed for this purpose.

"It seems beyond dispute that the benefits of the intermediation of a foreign freight forwarder in a shipment and the part he plays, generally, in the development of foreign trade, will be equally apparent in connection with goods that move by air as those which go forward by ocean surface carrier. If this



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be so—and we repeat, we feel it is beyond reasonable contradiction—then the airlines operating in international trade should adopt the same practice, although not on the same basis, of compensating the foreign freight forwarder from the freight earned in any shipment in which the foreign freight forwarder has a demonstrable interest.

"The purpose of this memorandum is to urge, at this time, when plans are in the state of formulation, that you adopt the practice of paying compensation to the forwarders and that you appoint a committee to discuss the terms of compensation and the rules under which payment would be made, with a representative group of the industry."

Airlines Traffic Men In New York Set Up a Club

The brainchild of Jack Forsythe then traffic representative for TWA in New York and now district traffic manager in Philadelphia, the Airlines Club of New York is now a going organization. Its officers are Frederick A. Quanger, TWA, president; Warren King, UAL, vice president; Eileen Roddick-Roberts, TACA, secretary; and Charles Ricker, EAL, treasurer.

Comprising the Board of Governors, in addition to the elected officers, are Harley Hallock, AA; Richard T. McIntosh, PAA; Jack Loudon, NAL; Martin Graefe, NWA; Franklin D. Hunt, NEA; Edward Wilson, PCA; Phil Barrett, AE; Lou Perry, CA; Peter Mellon, TCA; Harold Gyllensward, ABA; and Marjorie McInnery, KLM.

Up to June of this year, the traffic representatives of New York had never met as a coordinated group. It was Forsythe who conceived of the idea of a formal organization of airlines traffic personnel carrying on a coordinated and enlightening program. He contacted the local district traffic managers and requested that their "street men" meet at the Cornell Club. This took place on June 10th, with the result that some 15 traffic men enthusiastically endorsed the proposal. Before the day was out it had been decided that the "airline industry needed a club where problems of air transport could be discussed in open meetings by informed leaders in the industry, and ideas generated to promote more efficient salesmanship."

The second meeting took place on July 16th, this having been set up by Quanger and McIntosh. A charter committee was inaugurated under the direction of King, and the first concrete purposes and organizational routine were laid down. Election of officers took place last month.

Frye Says Constellations Will Fly TWA's Domestic, Overseas Routes Shortly

Three-hundred-mile-an-hour commercial air service by Transcontinental and Western Air with a new fleet of Lockheed *Constellations* may be expected any day now, according to Jack Frye, president of the company. This would mean the transportation of cargo and passengers from coast to coast in 10 hours, and from New York to Europe in less than 14 hours—a saving of from four to seven hours in existing transcontinental flights, and from 9½ to nearly 11½ hours in present commercial transatlantic schedules to and from Europe.

Frye revealed at a press conference in Washington that TWA has purchased 36 *Constellations* at a cost of $30,000,000. These four-engine transports, cruising at five miles a minute, will carry 51 passengers in pressurized, air-conditioned cabins. According to the TWA president, the plane will be seen first on his company's routes, "because of prior delivery rights gained by TWA's exclusive development of the airplane." It is understood that the *Constellation* will be released to other lines towards the end of the year.

"Before the war, it cost $375 to fly from New York to London," Frye said. "During the war, this fare was raised to $672. Subsequently it was reduced to $572, where it has remained. This is more than 17 cents a mile, or nearly four times the rate charged by competing airlines within the United States."

Frye added that TWA will use the *Constellation* "to establish reasonable fares for transatlantic travel, details of which will be announced soon."

The largest and heaviest airplane tire ever built—a tire that measures 110 inches in overall diameter, and, complete with rim and tube, weighs 2,600 pounds has been produced by the Goodyear Tire and Rubber Company, and has been subjected to Army tests at Wright Field.

According to President Randolph C. Walker, Aireon Manufacturing Corporation's newly formed Mexican subsidiary, known as Aireon S. A., has secured a contract for a complete new radio communications system for Compania Aereas de Vera Cruz, the equipment for which will be manufactured at Aireon's Kansas City plant.

Planeload of Cargo Chuted To Earth in Seven Minutes

RAPID EJECTOR—Interior of a C-47 cargo-plane, showing the conveyor belt developed by the United States Rubber Company. The belt starts revolving at the press of a button, carrying the packages to the rollers near the cargo door.

A conveyor belt to unload cargo from airplanes in flight has been developed by the United States Rubber Company in cooperation with aviation engineers. It is reportedly capable of ejecting the entire cargo of a plane in less than seven seconds, all packages landing close together in a small area.

It was pointed out by United States Rubber that before the development of this electrically powered unit, cargo was pushed out of the plane by a member of the crew. He lay on his back, braced by handholds near the cargo door, the heavy packages piled up in front of him in kick formation. One by one these packages were kicked out, usually landing in widely scattered places.

The job of discharging load of freight took as long as 40 minutes, with the craft passing back and forth above the "drop zone." With the new conveyor device, the plane speeds over the zone once and the contents are ejected almost instantly at the press of a button.

V. E. Chenea, vice president and general traffic manager of PAA, has announced a reduction in fare on the Los Angeles-Mexico City route and the addition of another daily flight to San Juan out of Miami. At the same time, the company's new consolidated timetable of its services over the Atlantic, to Alaska, and to and within Latin America, made its first appearance.

The Australian Senate has passed a bill to nationalize Australia's interstate airline services, but the act will not be enforced until after the Federal elections next year.

THE successful development, through the cooperation of the Pennsylvania Central Airlines, a practical and economical cargo chute by SWITLIK opens the door to vastly improved service in the field of air mail and cargo delivery. Engineered by the same SWITLIK STAFF that produced the famous SWITLIK SAFE-T-CHUTE, the

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is easily adaptable for use with large or small planes; may be dropped accurately into a small space and will safely handle the most fragile articles without special packaging. Harness and method of attachment provide maximum flexibility in package size and weight, also economy in, air and ground handling.

SWITLIK CARGO CHUTES will make possible delivery of air mail and cargo anywhere, regardless of landing facilities and will thereby increase many fold the usefulness of air transport.

Your inquiry is cordially invited and our engineering staff will be glad to cooperate with parties interested in parachute development.

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NEXT STOP—*Anywhere!*

IF there still are some skeptics around who continue visualizing the Atlantic and Pacific Oceans as thousands of miles wide and thinking in terms of weeks-long and even months-long trips, we recommend a glance at the timetable of world air routes set up by the Boeing Aircraft Company. In preparing the schedule, the company had in mind its *Stratocruiser*—known to the Army as the C-97. This is the plane which, 10 months ago, flashed across the country from Seattle to Washington, D. C., carrying a 20,000-pound payload at an altitude of 30,000 feet, in six hours, three minutes and 50 seconds. Just study this time table for a few minutes.

Route	Mileage	Hours	Minutes
Okhotsk—Fairbanks	2,145	7	10
Okhotsk—Vladivostock	1,250	4	14
Vladivostock—Dutch Harbor	2,950	9	36
Dutch Harbor—Anchorage	750	2	37
Vladivostock—Shanghai	1,005	3	36
Shanghai—Hongkong	760	2	41
Hongkong—Singapore	1,620	5	26
Singapore—Darwin	2,075	6	56
Singapore—Manila	1,479	4	57
Manila—Darwin	1,979	6	37
Manila—Guam	1,587	5	19
Manila—Kwajelin	2,942	9	36
Guam—Kwajelin	1,599	5	22
Kwajelin—Honolulu	2,427	8	02
Honolulu—Samoa	2,604	8	37
Samoa—Wellington	2,062	6	54
Wellington—Sydney	1,340	4	31
Sydney—Samoa	2,680	8	49
Sydney—Darwin	1,790	5	58
Honolulu—San Francisco	2,407	7	59
Honolulu—Seattle	2,700	8	05
San Francisco—Seattle	680	2	26
Seattle—Anchorage	1,410	4	44
Vancouver—Winnipeg	1,125	3	49
Winnipeg—Montreal	1,175	4	00
Seattle—Chicago	1,743	5	49
Chicago—New York	711	2	31
San Francisco—Chicago	1,855	6	19
Seattle—Denver	1,020	3	30
Los Angeles—New York	2,446	8	10
Los Angeles—Mexico City	1,540	5	10
Mexico City—New Orleans	934	3	13
Mexico City—Panama	1,495	5	01
New Orleans—Chicago	834	2	55
Miami—New York	1,100	3	45
Miami—Panama	1,170	3	58

Route	Mileage	Hours	Minutes
Panama—Lima	1,475	4	57
Lima—Santiago	1,330	4	29
Buenos Aires —Rio de Janeiro	1,218	4	09
Rio de Janeiro—Natal	1,300	4	02
Natal—Trinidad	2,135	7	07
Trinidad—Panama	1,278	4	19
Trinidad—Miami	1,568	5	16
Trinidad—New York	2,353	7	49
New York—Gander	1,105	3	46
Gander—Revkjavik	1,770	5	55
Revkjavik—Oslo	1,083	3	41
Gander—London	2,359	7	49
London—Moscow	1,549	5	12
Moscow—Paris	1,541	5	10
Paris—Azores	1,659	5	34
Azores—New York	2,422	8	02
Lisbon—Marseille	1,020	3	30
Azores—Dakar	1,760	5	54
Trinidad—Dakar	2,970	9	40
Natal—Dakar	1,732	6	02
Dakar—Lisbon	1,787	6	00
Dakar—Leopoldville	2,565	8	28
Leopoldville—Johannesburg	1,700	5	43
Johannesburg—Capetown	800	2	48
Johannesburg—Aden	2,950	9	03
Aden—Leopoldville	2,350	7	44
Marseilles—Aden	3,130	10	07
Cairo—Teheran	1,220	4	08
Teheran—Bombay	1,750	5	52
Bombay—Aden	1,860	6	13
Teheran—Moscow	1,530	5	08

Symington Asks Fair Play In International Aviation

"Every country must have the right to run international air lines if it so desires and if it subscribes to the international rules and regulations. These international rules and regulations must be fair and they must be settled. No international service worthy of the name can be established if in each and every country different regulations are set up dependent upon a multitude of bilateral agreements."

These were the words of H. J. Symington, president of Trans-Canada Air Lines, and president of the International Air Transport Association, who was a speaker at a dinner tendered by the Montreal Board of Trade to delegates of the IATA and the Provisional International Civil Aviation Organization.

United States Route Miles Are Now at All-Time High

The network of air routes available for the transportation of passengers, airmail, and cargo in the United States was increased by 4,034 miles in the first three quarters of 1945. The total number of route miles which the airlines are now authorized to fly by the Civil Aeronautics Board has reached the all-time high of 66,971, according to a survey made by the Air Transport Association of America.

The new routes added to the domestic airline system of the United States up to October 1, 1945, followed the establishment of 8,435 miles of new routes in 1944. The total of 12,469 undertaken in these two war-time years substantially exceed the country's entire system of airways only 17 years ago.

★ WHERE THE AIRLINE PILOTS MEET...

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COMMERCIAL AVIATION and the PORTUGUESE TRIANGLE

An authoritative and informative article on the dire need for air service linking Portugal, the Azores, and Madeira. The author goes even further, recommending an inter-island airline for the Azores and discussing its expected effect on the air freight and air passenger business.

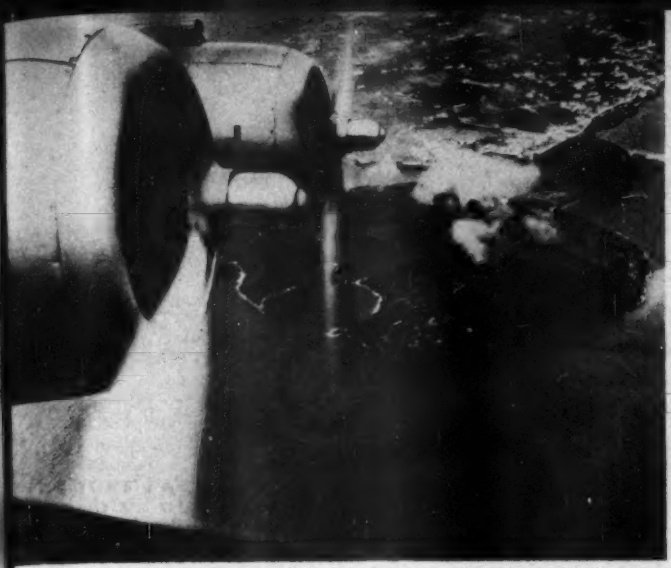
By Jose Bensaude
President, Flomarcy Company, Inc.

LISBON, Madeira and the Azores, form the vertices of what is known in naval and geographical parlance as the Portuguese Triangle. The importance of the Azores and Madeira in the sphere of Portuguese economy is evident in the fact that both the Azores and Madeira are considered an actual part of the Portuguese Home Republic, politically as well as otherwise. They are not considered colonies or dependencies, and occupy a position similar to that of the Home Islands in the United Kingdom.

It is obvious that the integration of activities in the Portuguese Triangle is dependent upon, and of necessity proportional to, the available means of transportation and communication. The only service now existing within the Portuguese Triangle is carried on by Portuguese steamers which ply, more or less regularly, with sailings about twice a month, between Lisbon and the Azores via Madeira. The average time required for a voyage between Ponta Delgada, the capital of the Azores, and Lisbon, is about five days, while a complete return voyage requires about three weeks, since the vessels make a circuit of the nine Azores Islands before returning to Lisbon. Thus, even a short business trip from Lisbon to the Azores and Madeira, or vice versa, will, of necessity, require a minimum of about a month's time, due to the slowness of the trip and the infrequent departures—and this is not to mention the inconvenience of limited accommodations and inadequate stopovers. All this necessitates long-range planning and prolonged absences, even for a business trip that might require as little as a day or two at destination. Yet the distance between Ponta Delgada and Lisbon is about the same as that between New York and Chicago. One can well imagine the detrimental effect on travel between New York and Chicago if 30 days or more had to be spent in slow travel and waiting on a trip that required one's presence at destination for only a day or two.

This same difficulty applies to an even greater extent in the case of mail service, in which case delivery in the minimum possible time is rather the exception than the rule. Missing a mail boat in the Azores or Madeira generally means a loss of two weeks. Here again, one may imagine the difficulties and inconveniences that would result if one exchange of mails between New York and Chicago required a month-and-a-half.

Air mail service in the Portuguese Triangle would undoubtedly occupy a unique position of importance, for there is not even a remote competition between the speed of air mail and the slow and infrequent ocean mail service. If the difference in the time of delivery between air mail and surface mail were only a day, as is the case between New York and Chicago, there would be some reason for not expecting a universal adoption of air mail service. But where the difference is two weeks or more, there can hardly be any doubt that



BIRDSEYE VIEW — Horta is not unknown to air travelers. This picture of Horta was taken from the window of a B-314.

air mail will occupy a unique and dominating position in all communications, not only within the Portuguese Triangle, but beyond as well.

In addition, an important source of revenue for an airline covering the Portuguese Triangle would be derived from air freight. Since the islands depend upon the mainland for almost all industrial and manufactured goods, machines and replacement parts, and other related items, the need for rapid transportation of important shipments (suitable in size for air freight) will almost continuously arise, and one may even contemplate an eventual use of air freight facilities for the export of certain types of agricultural and dairy products (which form the principal exports of the Azores) to Portugal and Madeira.

One of the main stimuli for travel to Madeira would, of course, be the world famous tourist attractions to be found there. The British have always been the most numerous and consistent tourist travelers to Madeira, many coming by way of Portugal. The air service from London to Lisbon would, when supplemented by an air service from Lisbon to Madeira, enable tourists to visit Madeira on comparatively short holidays, and to spend more time in Madeira and less time in travel.

The all-around advantages of air service from Lisbon to Madeira and the Azores are almost too self-evident to require further elucidation. There is, however, another aspect of this air service which it would be well to look into—and that is the importance of an inter-island airline in the Azores archipelago, which would be an actual part of the Lisbon-Madeira-Azores airline. The particular advantages in connection with this phase of the airline are sufficiently interesting and important in themselves to be treated separately, since little is known regarding the Azores in comparison with Lisbon and Madeira. The following presentation is for the most part also applicable to the entire Lisbon-Madeira-Azores airline.

With the development of regularly scheduled transatlantic air service, the important position of the Azores Islands in international aviation has become firmly established. Whereas the Azores were formerly isolated outposts more or less on the wayside of the principal transatlantic shipping routes, they are now an integral part of the transatlantic airlanes which are bustling with an air traffic that would have been considered incredible only a decade ago.

There is every justification, in view of the inevitable prospect of an ever increasing transatlantic air traffic, for expecting that the Azores Islands themselves will benefit greatly. Already giant airfields, embodying the latest advancements in construction and design, have been built on the islands of Terceira and Santa Maria; and these, together with the earlier air and sea-air bases on the islands of San Miguel and Fayal, form a ready-made link between the most populous islands of the Azores.

Existing travel facilities to and from the Azores and within the islands are slow, inconvenient, and so infrequent as to be practically eliminated as a competitive factor. Furthermore, it is reasonable to expect that when inter-island travel becomes a matter of minutes rather than days or weeks, there will be a great increase in normal passenger traffic between Lisbon, the Azores, and Madeira.

Among the many needs and uses of an Azores inter-island airline may be listed the following:

1. To serve as a connecting link between the main transatlantic airbases at Santa Maria and Terceira, enabling passengers to and from the Azores, whether by sea or air, to make quick connections with the other islands.

As conditions exist at present, passengers

arriving by sea at Ponta Delgada or by air at Fayal would be compelled to wait many days to make a steamer connection for an adjoining island only minutes away by air. This is particularly discouraging in the case of travelers from both sides of the Atlantic who would ordinarily desire to make short business or pleasure trips, but who cannot afford the time lost by slow travel and infrequent connections.

2. The airline will serve as a rapid and efficient inter-island link, permitting a more frequent and active passenger and freight service within the archipelago itself.

The Azores Islands, with a population of over 250,000, will become, instead of nine or more less isolated units, one well integrated and interdependent unit. All of the islands will be connected more closely with Ponta Delgada, the capital, making possible return trips within the same day while allowing ample time for business. The consequent increase in the economic and commercial activities of the islands will no doubt stimulate business, and serve as a basis for attracting new enterprises.

3. An Azores air service will facilitate and encourage tourist visits to the islands for tourists who wish to make short stop-overs on transatlantic trips.

As a tourist attraction, the Azores present many unique and unusual features of topography, local color, life and customs that will appeal strongly to the postwar traveling public. The mild, even climate at all seasons; the beautiful rolling green hills; the enormous crater of Sete Cidades, with its little city at the bottom nestling beside the sapphire-blue crater lake; the health-giving hot springs at Furnas; the 7,600 foot active volcano on Pico; the superabundance of wild flowers; the camelia forests; the quaint native customs; the colorful little cities—these and endless other attractions will be brought within hours of the United States and Europe, and within minutes of the main transatlantic airports on the islands. The Azores Islands will have an added tourist appeal because they are off the well-worn "beaten track" of tourist itineraries, yet right on the "beaten track" of international aviation.

4. The large Portuguese colony in the United States, descended directly from the Azores, will be in a better position to make more frequent trips to the islands.

Most of the approximately 500,000 Portuguese and Portuguese-Americans in the United States are of Azorean extraction. Normally, there is a considerable passenger traffic of these people visiting the islands to see their families, relatives, and friends. Ordinarily, anyone wishing to visit the islands for these reasons would have to allow three to four weeks just for traveling, not to mention the inconvenience of adjusting one's itinerary to infrequent schedules. A regular air service in the Azores will make it possible for people with as little as one week's vacation to make the round trip from the United States to any of the islands and spend practically his full time with his family and friends. This fact, combined with the low postwar fares forecast by the transatlantic airlines, cannot help but bring about a great increase in this category of passenger traffic, to and from and within the Azores.

5. Inter-island air service in the Azores will permit an air freight service designed to connect with the transatlantic flights, permitting through air express service from the continents as well as between the islands.

There are many new and heretofore impracticable uses to which an inter-island air freight service would apply:

(a) Anti-toxins, serums, blood samples, vaccines, and medical supplies of all kinds can be forwarded quickly and without refrigeration.

(b) Cash registers, adding machines and other business equipment, x-rays equipment, medical, surgical, and other instruments, can be sent to Ponta Delgada or the mainland, for replacement or repair without being out of service for a long period of time.

(c) Shipment of spare parts for automo-

FURNAS, ST. MICHAEL'S — A view of the Municipal Park. The island is one of the more important in the Azores.

AZOREAN SCENE —The author points out that today the Azores are "an integral part of the transatlantic airlanes . . . bustling with an air traffic that would have been considered incredible only a decade ago."

bues, electrical equipment and mechanical parts in general can be effected with a minimum delay to operations.

(d) Fresh fish, vegetables, fruits (particularly pineapples—one of the most important industries on the island of San Miguel), and other foodstuffs, poultry and even livestock can be quickly transported from one island to another and to the mainland.

(e) Miscellaneous general freight can be transported which may require, for one reason or another, shipment in a minimum of time. Such items might be books, radios, small luggage, printed matter, etc.

It is interesting to note, in this connection, the success of Hawaiian Airlines in air freight operations within the Hawaiian Islands. The range of operations of this airline is approximately the same as would apply to the Azores, and there are enough similarities between the two groups of islands to permit an approximate basis of comparison.

In 1943, Hawaiian Airlines flew 884,723,692 freight miles, carrying 4,598,448 pounds of goods by air, not withstanding that the airline flies only 530 route miles. A freight revenue of $202,827.00 was realized for this year. Although 1943 may be considered a typical war year, the company has shown consistent increase in its freight operations over more than a decade of its existence, and there is every justification to expect this increase to continue in a post-war world which would be far more air-minded and technically equipped for aviation than the pre-war world. (Last year Hawaiian topped the 1943 air-freight record by 21.54 percent and air express by 45.4 percent—Editor.)

6. An Azores airline will permit the establishment of through airmail service to and from all the Azores Islands.

The existence of transatlantic air mail service is now taken for granted in much the same way as domestic air mail service. However, the advantages of transatlantic airmail are practically nullified so far as the Azores Islands are concerned by the slow and infrequent communications within the islands. For example, an air mail letter leaving Lisbon destined for San Miguel would at present arrive by *Clipper* at Fayal, and then would have to wait as much as two weeks, or even more, before it arrived at its final destination 200 miles away or less. It stands to reason, therefore, that the existence of through air mail service to all the Azores Islands will stimulate the use of air mail communications with the islands, and will certainly account to a measurable extent in the revenue of the airline. One of the important advantages of through airmail will be the rapid dispatch of newspapers, periodicals, and other important documents, which can be received within a day or two of dispatch from the Continent.

7. The airline can serve in emergencies for the transport of medical personnel and supplies, or for any other emergency needs that may arise.

Even in a country like the United States, so thickly combed by highways and railroads, the airplane has proved to be a valuable asset in many emergencies, particularly floods, hurricanes, and blizzards. In the Azores, however, where surface transportation is practically nonexistent, and where hospitals and other facilities in general are limited, an inter-island airline would most certainly fill an important need and play an integral part in well-being of the islands.

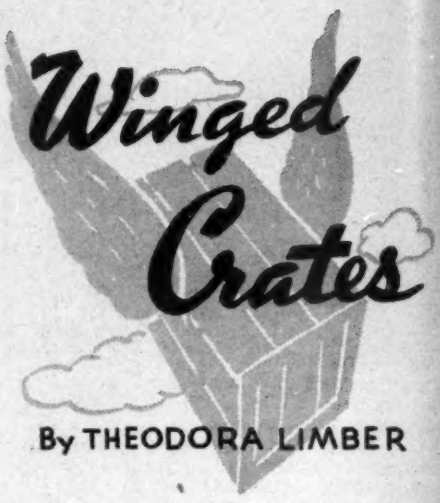
8. The airline would be available for chartering purposes on special occasions.

On the basis of similar operations of Hawaiian Airlines, a considerable revenue may be expected from chartering fees from both private and government sources.

9. An Azores-Lisbon-Madeira Air Service will form a basis for ultimate expansion to the Portuguese Empire and to foreign countries.

The experience gained in operations over the Portuguese Triangle will no doubt lay a firm foundation for the expansion of the airline to the Portuguese Empire and to foreign countries. Although no such expansion is contemplated to begin with, the success of operations in the Azores-Lisbon-Madeira Service cannot but lead to further development and expansion in other areas.

Winged Crates



By THEODORA LIMBER

SUPERCARGO airplanes will fly avocados from Cuba to New York in the heart of winter—fresh orange juice of tree-ripened fruit from California to Chicago within 48 hours after the oranges are picked—and all sorts of tropical and semi-tropical fruit to all corners of the ice-bound globe at any time.

This is not a dream. It is already part of a growing reality.

To achieve it, wirebound box manufacturers are now throwing into high gear their peace-time designing of air freight containers that have reduced the weight of air shipments as much as 2,500 pounds per load, and have made economically practical the transport of fresh fruits and vegetables by air.

A lettuce container designed by a wire-bound firm and put into practical use only a few months ago, for instance, pared down the weight per container more than six pounds. Asparagus wirebound containers flying asparagus from Sacramento, California, to the East in regular shipments this year were reduced from four and one-half pounds each for the standard asparagus nailed crate to two and one-half pounds—representing a saving of 40 cents per crate in air freight. The air celery crate was trimmed from five pounds, eight ounces for the former standard crate to two pounds, 10 ounces, or nearly one-third the weight.

These new wirebound air freight containers opened up to housewives all over the United States this year, for the first time in history, the opportunity to serve on their tables within 48 hours after harvest, sun-ripened, vine-fresh fruits and vegetables that are far more attractive in appearance, taste and vitamin content.

Lettuce, celery, cantaloupes, strawberries, melons, plums, peaches, carrots, apricots and cherries, so far have been air transported in special wirebound crates from California to eastern markets shortly after they have been picked.

The job of engineering these containers to be of strong but lightweight design has been a highly scientific and exacting one. For instance, to build strength and reduce weight in the lettuce crate, the manufacturer instead of using one-ninth of an inch rotary cut fir, successfully sliced the slats down to one-twelfth of an inch thickness—with the result that the air freight wire-bound lettuce crate was reduced to a fraction under four pounds as compared to the 10 pounds netted by the former surface transport wooden crate design.

The sides of the new crates, although one-third thinner, retained essentially the same strength because the slicing technique preserved the grain of the fir, leaving it clear and straight. The principle of wirebound crates—the binding of relatively thin slats with stapled wire, thus adding the strength of steel to wood—further strengthened the crate at the same time it saved weight.

Like the wirebound lettuce crate for air freight, the asparagus crate was also sliced down to one-twelfth of an inch thickness, instead of using the customary rotary cut. Furthermore, it was designed in pyramid-shape to custom-fit the asparagus and make an entirely compact package. Cleats were built in at each end and one in the center for reinforcement, and the whole was bound with 15-gauge galvanized wires held in place with staples.

To save further weight, the asparagus butts were trimmed so that the spears ran seven inches long instead of the customary nine inches. The result was that the crate weighed two-and-one-half pounds, which represents approximately a two-pound saving in weight under the wood-nailed crate, when the latter is cut down for seven-inch stalks.

This meant a total saving of 2,500 pounds in one recent asparagus air shipment out of Sacramento to Philadelphia. *At a saving of 40 cents per crate in air freight, the total saving on the load was substantial.*

The first test with airborne asparagus, picked in Stockton, California, one day and flown overnight to Pittsburgh for sale the following morning, resulted in a price of 69 cents a pound, but dropped to 35 to 40 cents as local asparagus hit the market. Airborne

broccoli, flown in a later shipment from California to Chicago, was priced at 35 cents a bunch as compared to 19 cents for shipments that traveled by railroad. Airborne lettuce sold for a differential of five cents a head over surface-borne lettuce.

But consumer response to the higher-priced airborne perishables is excellent, according to early records in a 90-day test of flying perishables from California to the East, launched July 1 and now in progress.

Fruits and vegetables leaving California around noon on one day and placed on sale in Cleveland stores as they opened for business the following morning were entirely sold out long before noon, despite the higher prices, it was reported. A similar response was noted in Detroit, New York, Boston, Philadelphia, and Chicago, which comprised the other markets taking part in the 90-day test undertaken by Ralph E. Myers Company of Salinas, California, one of the largest growers on the West Coast.

The enthusiastic consumer acceptance was attributed to the extra quality, appearance and flavor of tree and vine-ripened fresh fruits and vegetables offered the housewife within 48 hours after harvest, and also to the attractive consumer packaging of all airborne perishables. For instance, each head of airborne lettuce is wrapped separately in cellophane. Shelled peas and carrot bunches come in cellophane bags; tomatoes and plums in attractive one-pound two-window boxes; and asparagus in cellophane-wrapped bunches.

Consumer wrappers designate that the contents are airborne and specify weight, which is a time-saver to the shopper and makes buying easier for her. These consumer wrappers also give the shipper's name and address. This is done because it is good advertising for the shipper and brand, and is also required by the OPA which has raised the ceilings on perishables shipped by air.

The "airborne" mark not only means ripe harvesting and better quality, but is also a guarantee against spoilage for a longer period of time.

Air shipments of perishables so far have all been dry-pack, eliminating the common consumer complaint of having to buy "rusty" lettuce, etc. Routes and containers are being selected in present tests to bring about good conditions en route. Pilots are instructed to keep temperatures inside the plane at 45° F.,

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AIR CARGO PACKING AND DISTRIBUTION DIVISION

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WEIGHT-SAVERS — A truckload of wirebound crates, each containing 48 heads of lettuce, being loaded into an American Airlines Airfreighter.

and under no consideration to allow them to drop below 35° F. Altogether, an attempt is going to be made to eliminate the necessity of refrigerating or precooling practices.

The openings between the slats of the wirebound crates designed for air transport are an aid in this direction. The openings permit the circulation of air into and through the contents, precluding spoilage. For this reason, wirebounds are proving superior to solid boxes, in which some products have a tendency to "sweat." The wirebounds in some instances are also proving lighter than paper containers.

Weight naturally is a factor of prime importance in computing cost of air shipments. Today the cost for air perishables on a 2,000 mile flight is approximately 20 to 26 cents a pound. But with experimental shipments continuing, shippers, airlines, container manufacturers and receivers are learning, and gradually a pattern is being worked that will increase efficiency and lower costs.

For instance, in the case of experimental tests being conducted during the 90-day period by huge Consolidated Vultee M-39s, carrying cargo loads of 18,500 pounds of fruits and vegetables from the West Coast to the East, return loads are now reducing costs of eastbound loads. In the early weeks of the test, return trips were not well organized; and the planes flew stoves, parts or any materials that were available. But now a permanent arrangement has been made with department stores in Los Angeles to return West with full loads of mixed merchandise.

MEAT ON THE WING —During the acute meat shortage, tons of meat were rushed by plane to key production areas. Good packaging meant more weight and space.

Bottleneck in Financing Foreign Air Cargo

International trade by air cannot be developed without adequate financing, the author states. To finance air shipments banks require an airway bill conveying title to the merchandise. He points out that airway bills presently used are not instruments of title, and recommends immediate steps to remedy the present situation.

By A. M. Strong

Vice President, American National Bank & Trust Company of Chicago

THREE basic elements play an important part in the development of modern commerce: the demand and supply of goods, availability of credit, and transportation facilities. The history of transportation is the history of commerce. A close parallel can be drawn between the development of primitive barter into modern international trade, and between the development of transportation from the camel caravan to the modern plane.

The role of air transportation in foreign trade cannot be measured by present standards. There are sufficient indications that carriage of goods by air will have a profound effect on international commerce. It will bring changes in our marketing methods and in our methods of financing. It will release capital tied up in merchandise in transit and in inventories. It will reduce the speculative element in foreign trade by making it unnecessary to purchase goods long in advance of seasons and it will reduce the cost of financing by reducing the turnover time between purchase and distribution.

Financial facilities are of paramount importance to the development of international air cargo. Foreign trade is not conducted on a cash basis. It is arranged primarily on a credit basis. Banks have established an efficient mechanism for these transactions. Through the Irrevocable Letter of Credit they underwrite a buyer's promise to pay for the goods. Through collection arrangements they retain custody of the goods shipped until payment is received.

American importers as a rule establish Letters of Credit in favor of the foreign sellers. The Letter of Credit is an undertaking by a bank to pay drafts accompanied by shipping documents or other documents of title. The importer pays for the goods when the draft and documents are received by his bank. Quite frequently the credit is established on a time basis; that is payment is made within a specified time after the documents have arrived. Exports are usually made on a draft basis; that is, the exporter draws a draft on the foreign buyer and turns over the draft and shipping documents to his bank for delivery to the seller against payment. Such drafts are frequently discounted by the seller's bank, enabling him to receive cash long before the foreign buyer pays for the goods. In either case, the underlying merchandise is used as security for the transaction through the hypothetication of the shipping documents.

The documents in ocean traffic give the bank as consignee, or holder of the negotiable bill of lading, title to the goods. Unless a bill of lading conveying title is employed in air traffic, banks will not be able to finance air cargo on the same basis as they finance ocean cargo. The non-negotiable bill of lading used by air carriers consigning foreign cargo to an intermediary does not meet the requirements of

YESTERDAY AND TODAY—Mr. Strong indicates that "a close parallel can be drawn between the development of primitive barter into modern international trade, and between the development of transportation from the camel caravan to the modern plane."

bank financing as the document does not convey title to the goods.

The problem of financing of air cargo did not arise during the war period because most of the commodities transported by air were for Government account. The volume of private shipments was rather small. Air transportation of cargo, however, is entering the international field on a wide scale.

Three leading air lines have recently obtained permission to fly across the oceans to many foreign lands. These lines will operate throughout Europe, the Near East, India, Turkey, North Africa, Egypt and other countries.

A warning that the non-negotiable bill of lading employed by air carriers does not meet with bank requirements, was sounded at the Annual Convention of the Bankers Association for Foreign Trade, held at Montebello, Canada, in June of last year. A report submitted by the Committee on Uniformity in Documents and Practices pointed out that bank financing normally requires suitable documentation, including an airway bill giving the consignee clear title to the goods and that the airway bill presently used does not meet these requirements. The report further pointed out that the provisions made by certain airlines for consignments to intermediary agencies may create legal complications in the event of a dispute between the bank and the ultimate consignee. The report recommended that a coordinated effort be made to devise a uniform negotiable or non-negotiable airway bill, suitable for bank financing, and that comprehensive uniform laws be adopted with regard to international air shipments and the documents relating to such shipments.

International air traffic between the United States and the leading foreign countries is governed by the Convention for the Unification of Certain Rules Relating to International Transportation by Air, concluded at Warsaw on October 12, 1929, and known as the Warsaw Concention. The articles of the Convention deal only with the non-negotiable airway bill as the financing of air cargo was not a problem in 1929. Some doubt, therefore, exists as to whether under the rules of the Warsaw Convention, a negotiable bill of lading would be effective when the place of departure or arrival is situated in a country that is a party to the Convention. Air carriers should clarify the situation without delay, and if a modification of the Warsaw Convention is necessary, no time should be lost in bringing about such a modification.

The matter of air shipping documents was sadly overlooked in recent international conferences on air traffic. It is most important that air carriers take cognizance of the fact that lack of proper documentation has created a bottleneck in the financing of air shipments which may constitute a major obstacle in the development of air cargo. Steps should be taken through the existing international organizations or if necessary, through a special committee to devise and introduce a uniform negotiable airway bill.

DDL Opens New York Offices Headed by Max Westphall

Danish Air Lines (DDL), founded 27 years ago, have opened their offices in New York to promote the transatlantic route directly between the Scandinavian countries and the United States, in close cooperation with the Swedish and Norwegian Air Lines. DDL at present have their offices jointly with Swedish Intercontinental Air Lines, 630 Fifth Avenue, New York City. Danish Air Lines' New York manager is Max Westphall.

At the IATA Conference at Montreal, opening October 16, DDL will be represented by Prince Axel of Denmark, chairman of the Board of Representatives of the airlines; Per Kampmann, chairman of the Board of Directors and general manager; Knud Lybye; and Mr. Westphall. Prince Axel and his entourage will visit the United States after the Montreal parley.

IT'S AN Air WORLD

REG. U. S. PAT. OFF.

By L. A. GOLDSMITH, *Economic Analyst,* AIR TRANSPORTATION

IT IS rare indeed when a high ranking Air Force officer concerns himself with the importance of his country's industrial progress, as a factor in its aviation development at top levels of achievement. Brigadier General Antonio Guedes Muniz is such a man. He is profoundly convinced that without the backbone and the backing of a powerful industry, no nation can support an efficient Army, Navy or Air Force.

Brazil's Air Force Brigadier General Antonio Guedes Muniz Tells with Pride of Country's First Airplane Engine Factory

TODAY in Brazil, as a result of General Muniz's foresight and driving energy, the first airplane engine factory has been built and completed. The general lays particular emphasis on the word *engine,* as he does not wish to have this airplane engine factory confused with their Brazilian *airplane* factory.

From his own experience, General Muniz says it is comparatively simple to manufacture the many component parts of an airplane, such as the wings, fuselages, landing gears, ailerons, etc. The engine, however, is something else again. Manufacturing intricate machinery products requires high precision methods of production, which had not been installed in Brazil previously. It meant teaching local workmen the operation of the best and most modern machine tools. Both methods and machine tools were obtained from the United States. Complete cooperation was extended to the Brazilian Government and its officials from the United States Government, as well as from our industrialists and technicians.

The first construction of the airplane engine factory was begun in 1942, and it is now completed. To date, the engines being manufactured under license from Curtiss Wright are almost ready. Additional engines of the *Ranger* type under license from the Fairchild Engine and Airplane Corporation will also be in the works very soon.

The site of the airplane engine factory is about 25 miles from Rio de Janeiro. Believe it or not, this location was nothing but a large waste of swampland as late as September, 1942. There quantities of crocodiles lived, languished, and were finally killed off to make way for the encroachment of today's air world—the world of speed summed up by the age of flight.

Having disposed of the crocodiles, the aviation experts moved in. The swampland of yesterday

Brigadier General
A. G. Muniz

PROGRESSIVE BRAZIL—Birdseye view of Brazil's airplane factory. In the background is an aluminum foundry.

was drained, laid out in a modern manner, sanitation installed, and the engine factory built—all within a very short space of time.

But there were many other factors to take into consideration. As General Muniz points out most emphatically: "We had to consider that the industrialization of Brazil cannot be attained exclusively by building up a few large modern factories. The problem is a complex one, and will not be solved until we have as a further foundation for the support of our industrial development many well-integrated groups of trained engineers, executive-technicians, and skilled workmen. Furthermore, we want them to live in modern houses and in comfort, to be well fed, and to have good schools for their sons and daughters." A well-rounded progressive plan in this regard is essential, the general believes, when he says: "I have therefore proposed the construction of a whole industrial community, with the present airplane engine factory as its nucleus. I have been fortunate enough to merit the approval of my Government for the whole project."

Aviation, Industrialization Must Go Together—Airplanes, Steel and Hydro-Electric Power Are Basic in Brazil's Progress

And this is indeed *some* project! As the General went on to explain, "this industrial city and all its related services were originally planned in Brazil but the final project and all details are being worked out in New York, with the help of American architects and technicians." In passing it may be of interest to our foreign traders that all materials for the plant itself and the proposed industrial city are being secured—if available—in the United States.

The general plan is to build an industrial city to house not more than 25,000 people. This center when completed will probably be known as *Cidade dos Motores* (literally, *Motor City*). In the words of General Muniz, "this will help to show the Brazilian working class how they can live, how they can work, and how they can progress toward a better future." After *Cidade dos Motores* is completed, it is then the thought of the Brazilian official planners to develop hundreds of other small modern industrial centers all over their immense country. They believe that this will be much better than to overbuild Brazil's present large cities such as Rio de Janeiro and Sao Paulo, which are already becoming overpopulated.

Further in regard to Brazil's plans for a cumulative orderly development of industrialization, General Muniz expressed surprise at some unfavorable comments he has heard here. Certain people, apparently in good faith, have stated their belief, that if we in the United States help in the building up of Brazil's industries, that we will be eliminating a good customer. Such a

belief is, of course, erroneous. The contrary instead is more correct. As an example of this, the general smilingly points to Canada. That country is highly industrialized, and with only 11 millions in population is our second best customer in actual merchandise purchases. And "who," asks the general, "has been the United States' best customer up to now? One of the biggest manufacturing countries in the world—Great Britain!"

The general also stresses the fact that even when considered merely as an observer of human affairs, "the fact must surely be accepted that no completely agricultural nation has ever risen above the status of a semi-colonial community. It is most definitely the opinion of General Muniz that "only industry with the thousands of products it can produce—the increase in trade which it can develop—can spread riches and comfort and thus create a better standard of living." Certainly when Brazil creates a better standard of living for Brazilians, they will not only benefit in their internal economic position, but will also be very much greater potential customers for the outside world who wishes to sell them goods and services.

Brazil has made a most excellent start towards industrialization—commencing with the development of her steel plant at Volta Redonda, her plans for the expansion of her great potentials in hydro-electric power, and now her airplane engine factory. These three basic factors form the firm foundation from which to build in limitless directions.

There is no dearth of natural wealth and resources from which to create industrialization. These Brazil has in abundance. What is lacking is outside capital, industrial know-how, and a nucleus of trained technicians who will help to create the groups of skilled workmen needed for Brazil's great future potentialities. It is impossible to count on the fingers of two hands the various types of minerals and other natural resources already found in Brazil and countless more as yet untapped. Just to name a few: iron (estimated to be 25 percent of the world's total reserve), manganese, zinc, nickel, chromium, bauxite, tungsten, oiticica oil (said to be the equivalent of tung oil), castor oil, and huge, undeveloped oil and oil-bearing

Brazil's Resources Range From Raw Materials for The Atom Bomb to Diamonds For Adorning Beautiful Blondes

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shale. Her agricultural wealth in coffee and cotton is of world renown. Her cocoa development is, of course, insignificant when compared with her coffee but the possibilities here are enormous. If and when Brazil's natural rubber-bearing trees could be laid out in orderly plantations instead of overrunning jungle growths, the country will have practically everything needed for extraordinary expansion—all available from her own Good Earth.

For good measure remember also those decorative diamonds for the beauteous blondes, to say nothing of innumerable other precious stones, and above all, those precious industrial diamonds.

Just to give you an opinion other than that of General Muniz, or my own interpretation of his remarks regarding his own country, you may perhaps wish to stop, look, and listen to a few of the many words of wisdom and penetrating observations which William Ziff has to say about Brazil. These are somewhat casually introduced in his remarkable book, *The Gentlemen Talk of Peace (Ziff-Davis, formerly Macmillan)*.

The title is misleading, because it tends to indicate a limitation of subject matter, which is precisely the contrary. It is practically all-embracing on the subject of war and peace, world trade, and aviation, the effect of geography and populations on future world developments; a penetrating panorama of world inter-relationships. For foreign traders *The Gentlemen Talk of Peace*, published in 1944, has more meat in it than many a purely trading or economic factual study along the usual prescribed lines. For those of us who are viewing the world from an airplane's eye view, it is equally valuable. Here are a few of Ziff's quotations about Brazil, not taken in sequence, but forming a sequence of their own:

> "Brazil by virtue of its geographic position is destined to become one of the two great jumping-off places from which the combined commerce of the Americas will be hauled to Europe and Africa."
>
> "The enigma of this enormous Portuguese-speaking republic easily could dominate the events of the coming 25 years."
>
> "Within the confines of the Brazilian State is almost every known resource necessary to achieve national greatness. Her soil is fertile, and capable of growing any crop within the tropical, sub-tropical and temperate zones. . . . Brazilian mineral assets have only been partially explored, but they are known to exist in breathtaking abundance."
>
> "The conspicuous shortcoming of present day Brazil lies in the character and sparsity of her population. It is estimated that this fabulous land empire is capable of supporting in comfort 400 million people. At present it holds 45 million. Of these, pure Caucasians are about half. The rest consist of Negroes, Indians, and the various Mestizos and Caboclo, or mulatto mixtures."
>
> "There is some question as to whether this indolent and easy-going combination of racial stocks possesses the capacity for high-speed competitive organization. . . . Brazil is a giant question mark. Nevertheless because of its position and natural resources, it must be given a place in any estimate of the future. It requires only an extensive immigration of European or Asiatic peoples to give it the strength to dominate the Southern half of the Americas, and place it on a basis of parity with the *Yanqui* Titan to the North."
>
> "Much of her problem will be answered by the *transport plane*, which will provide the means by which her majestic distances can be controlled and exploited."
>
> "Since 1914 Brazil's industrial production has increased 3,000 percent."

There is much more that Mr. Ziff says of Brazil, and his belief that Brazil is destined to become one of the Big Four in our future world. This belief in itself is a provocative prophecy of the first order. If you should want to know just who are the other three of the Big Four, as indicated by Mr. Ziff, I will leave it to your natural curiosity to go further. It is certainly a surprise to see which of the present Big Powers Mr. Ziff eliminates from his calculations.

After reading Mr. Ziff's brilliant presentation, it would seem that he bases this prediction on the future Big Four on one main factor, and that is their geographic "positions in space." He believes that the four are the only countries in the world which can possibly meet the problems of the present century. Of course, Mr. Ziff's book was written before the Atomic Age opened up. Maybe that changes the whole aspect, but to my way of thinking it seems to me that atomic potentialities makes his viewpoint still more probable, perhaps more *frightfully* possible.

In view of Mr. Ziff's ably documented presentation concerning Brazil as one of the main world powers of an almost immediate tomorrow, the words of General Muniz regarding the plans for Brazil's industrial development take on a greater significance for ourselves.

AIR TRANSPORTATION Congratulates

EXECUTIVE

EDWARD S. EVANS, JR., elected president of Evans Products Company to succeed his father, the late Edward S. Evans. The new president, who is 30, is a Virginian by birth, but came to Detroit with his father and has resided there ever snce. He had been chief executive under his father for the past 10 years, serving as executive vice president and also as a member of the board.

COLONEL JAMES G. FLYNN, JR., named vice president of American Airlines, effective October 15. Formerly with the airline, he has recently been chief of operations, European Division, Air Transport Command, with headquarters in Paris.

BRIGADIER GENERAL L. G. FRITZ, elected vice president of American Airlines in charge of operations. An air veteran of World Wars I and II, he has been in aviation all his adult life. He was vice president in charge of operations for TWA when he was called to active duty with the United States Army Air Forces in April, 1942. He served as chief of operations, ATC, with the rank of colonel, and was promoted to brigadier general in June of last year.

BRIGADIER GENERAL HAROLD R. HARRIS, elected vice president and general manager of American Airlines Overseas (formerly American Export Airlines). Formerly senior vice president of Pan American, General Harris has been serving as assistant chief of staff, ATC. He began his flying during the First World War, and from 1918 to 1925 he was test pilot and chief of the flight test section of the AAF. In 1926 he held 13 world flying records. General Harris' last article for AIR TRANSPORTATION was published in April, 1945.

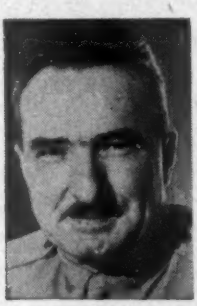
LIEUTENANT COLONEL JAMES D. HENRY, who has returned to Pennsylvania-Central Airlines as assistant to the president. He entered the service in 1942 as a first lieutenant, and earlier this year he achieved the distinction of having been decorated twice in one day by Lieutenant General Lewis H. Brereton. Colonel Henry served as General Brereton's assistant.

COLONEL RAY W. IRELAND, who, on November 1, takes over the post of vice president-administration of United Air Lines. On leave of absence from UAL since 1942, Colonel Ireland formerly served as traffic manager. His first connection with air transportation was as traffic manager of National Air Transport, a subsidiary of UAL. He served in the Army as chief of the Air Division, Transportation Corps, Service and Supply; assistant chief of staff, Priorities and Traffic, ATC; and deputy chief of staff of the ATC.

LIEUTENANT COLONEL LOUIS KELLY, who has returned to the American Express Company to direct its air transport division. Thoroughly schooled in transportation, he has been with American Express since 1926, starting behind a counter selling travel and working himself up to the position of manager of the company's Boston office before joining the Army. In March, 1943, he took over the job of deputy assistant chief of staff, Priorities and Traffic Section, ATC.

MUNDY I. PEALE, named vice president in charge of all sales for Republic Aviation. In his new position he will be in charge of both transport and personal plane sales, military contracts, exports, service, public re-

James J. Fauteux



Gen. H. R. Harris

Gen. L. G. Fritz

Among those occupying new posts are (left to right) Mundy I. Peale, Edward S. Evans, Jr., Colonel Ray W. Ireland, Robert K. Warner, Benjamin F. Pepper, and Lieutenant Colonel Louis Kelly.

lations, publicity, advertising, plant and employee publications, and the advancement of the company's Loftec process of reproduction. A graduate of the University of Chicago, Peale entered the investment business but resigned to take a master pilot's course at the Boeing School of Aeronautics. Later he became Western factory representative for the Sikorsky Division of United Aircraft, serving in several executive capacities, after which he joined Republic as assistant director of exports.

BENJAMIN F. PEPPER, named chairman of the Board of Directors of TACA Airways, S.A., parent company of the TACA airlines in Central and South America. A Philadelphian, Mr. Pepper is president of the Pennroad Corporation and Triumph Industries. He is also a director of the Canton Company; Detroit, Toledo and Ironton Railroad; Castle Shannon Coal Corporation; West Virginia Railway Company; and the Tradesman's National Bank and Trust.

LIEUTENANT COLONEL CHARLES R. SPEERS, JR., elected vice president in charge of American Airlines' traffic organization in the Eastern Region. He returns to AA after serving as chief of the Air Transportation branch, Air Staff, Headquarters Army Air Forces. Before joining AA, Speers was connected with the Continental National Bank in Chicago, Thompson Aeronautical Corporation, Transamerican Airlines, and American Airways.

LOU R. CRANDALL, elected to the Board of Directors of Curtiss-Wright. He is president of the George A. Fuller Company and an officer and director in several other companies, including the Manufacturers Trust Company.

RICHARD C. HIGGINS, who has joined TWA as assistant to the airline's vice president of traffic, E. O. Cocke. He will aid in the development of the airline's plans for domestic and foreign travel on its new international route. For 10 years with the Cunard-Anchor Steamship Lines in New York, he later became associated as a partner with the Keller Travel Club, a foreign travel tour agency specializing in escorted European tours. Subsequent positions were with the Anchor Line and Pan American World Airways.

MARSHALL C. HOPPIN, who has resigned as Regional Administrator of the Alaska Division of the Civil Aeronautics Administration to become president of Alaska Airlines, to succeed Theodore N. Law, retired.

W. L. WALKER, elected treasurer of Mid-Continent Airlines. A graduate of the University of Missouri, Walker joined an accounting firm in 1929 and later became connected with the Western Telephone Company. He also served as assistant comptroller of TWA.

CARGO

ROBERT K. WARNER, appointed Eastern regional cargo traffic manager for American Airlines. Employed by AA since September, 1940, and for the past two years engaged in the cargo traffic department, Warner previously was connected with the General Electric Company and Halle Brothers in Cleveland.

TRAFFIC

RAYMOND G. BLAIR and **J. J. SHAD,** respectively appointed Chicago district traffic manager and promoted to the post of Southern region traffic manager for Chicago and Southern Air Lines. Blair joined C & S from the traffic department of the Dodge Manufacturing Corporation where he was director of the materials branch. Prior to that post he was associated with the Government as a director of field research. Shad has been with C & S for over five years. He began his career as a reservations agent in St. Louis.

JAMES J. FAUTEUX, elevated to the position of regional traffic manager for Northwest Airlines at New York. Until recently he served as NWA's passenger traffic manager after having been district traffic manager at Chicago for three years.

(Reg. U. S. Pat. Off.)

AIR EXPRESS, REA

The volume of international air express shipments handled for July rose 31.57 percent over the same period last year, while domestic air express chalked up a solid gain of 25 percent over July, 1944. A 20 percent increase in number of international shipments for August, based on comparative figures for 1944, was registered during its first month of peacetime operations.

ALL AMERICAN

The company's total business in the fiscal year ending July 30, according to President Halsey R. Bazley amounted to $3,800,000 as compared with $3,475,000 in the previous year, but profits dropped from $238,577.50 to $191,771.13. The decline, he explained, was due to an operating loss of $73,931.98 incurred by the Air Transport Division and a write-off of $62,967.71 of deferred charges in connection with route surveys and new route applications.

BRANIFF

Braniff Airways planes flew a total of 744,663 revenue miles in July, 1945, as compared to 626,268 the preceding month and 488,233 in July of 1944. Revenue passengers carried in July totaled 35,854 as compared to 23,744 the same month a year ago. The total revenue passenger miles increased from 9,066,495 in July, 1944 to 14,075,581 in July, 1945. The percentage of available seats occupied in July, 1945 was 94.06 as compared to 91.53 for the same month last year. Braniff Airways operated 99.76 percent of the scheduled flights during July.

CHICAGO & SOUTHERN

C & S flew 84 percent more revenue passenger-miles during the first nine months of 1945 than it did for the same period of 1944. This involved carrying 92 percent more revenue passengers during the same period of time. The airline flew 61,400,000 revenue passenger miles during the first nine months of 1945, an increase of 83.64 percent over the same period of 1944 when the airline flew 33,475,778 revenue passenger miles. During January-September the company carried 137,230 revenue passengers as against 71,445 for the same period of 1944. This was an increase of 92.08 per cent.

COLONIAL

Colonial Airlines increased its passenger traffic between New York and Montreal by 61 percent last month, as compared with the same month in 1944. The line carried 10,185 passengers last month against 6,295 in September, 1944.

EASTERN

Eastern Airlines' operating figures for the month of August, 1945, show substantial increases over the same figures for August, 1944. Revenue passengers carried in August, 1945, totaled 84,000 as against 44,000 for August, 1944, a 93 percent increase. Passenger revenue was up 62 percent for the month. Revenue passenger-miles flown in August, 1945, were 43,067,000 as against 23,486,883, an increase of 83 percent. Revenue plane-miles flown for August, 1945, were 2,460,916 as against 1,576,612, an increase of 56 percent.

MID-CONTINENT

MCA's operating revenue for the month of August, 1945 was $331,530; an increase of 76 percent compared with August, 1944 and an increase of 24 percent over July of this year. August revenue was the highest in the company's history. Revenue passengers carried were 16,887, an increase of 139 percent compared with August, 1944 and 25 percent compared with July, 1945.

J. W. Miller, president, stated that even though the company's mail pay, due to increased miles flown, was reduced from 40.5c per revenue-mile in August, 1944 to 25.28c per mile in August of this year, the net profit of the company after provision for income taxes amounted to $35,792 as compared with a net profit of $27,627 in August, 1944 and $17,573 in July, 1945.

NATIONAL

A 120.79 percent increase in revenue-miles flown by NAL in August, 1945 over the revenue-miles flown in the same month 1944, was announced by H. S. Parker, Jr., vice president. Revenue-passengers carried in August, 1945 totaled 14,124, as compared with 9,615 for the same month 1944. The load factor from Jacksonville to New York was 95.75 percent, New York to Jacksonville 93.88 percent, Tampa to Jacksonville 93.35 percent, and from New Orleans to Jacksonville 90.33 percent.

NORTHWEST

For the second straight month, NWA planes flying between New York and the Pacific Northwest carried all-time record loads of air mail in August. The airline's mail total was 606,687 pounds, an increase of more than 4,000 over the July figure, the previous record, and more than 105,000 over the total for August a year ago. Mail loads were carried 543,588,436 pounds-miles, which exceeds the July record by 24 million and the August, 1944, mark by nearly 100 million.

Air express loads in August topped those of the same month a year ago by more than 73,000 pounds, with a total of 247,146 pounds carried in August. A similar increase was reported in the number of pound-miles flown. The express loads, carried between New York and Seattle-Tacoma-Portland, were flown 158,715,338 pound-miles in August, 48½ million more than in the same month of 1944.

[REG. U. S. PAT. OFF.]

International Express and Mail Tables

Air express rates quoted are from U. S. International airport of departure (U. S. Gateway) and are based on the prevailing tariffs, airport to airport (*see note*); also see note for Airfreight rates. Shippers are warned, however, that these are subject to change.

GATEWAY SYMBOLS

Bb—Bangor, Me.
Bro—Brownsville, Tex.
Bw—Boston, Mass.
Cg—Chicago
Cub—Cut Bank, Mont.
Dl—Dallas
Eo—El Paso
Fv—Fort Worth
Gf—Grand Forks, N. D.
Jg—Burlington, Vt.
Lgs—Los Angeles
Lo—Laredo
Mia—Miami
No—New Orleans
Nyk—New York
Sa—San Antonio
Sq—San Diego
Ste—Seattle

International Air Express is subject to two charges: one a charge per pound weight or measurements at carrier's option (200 cu. in. to the pound of weight), the other a charge per $100 of valuation. The two must be added on any shipment to determine the cost. Neither includes insurance, which may be purchased by the shipper from the carrier or otherwise.

Priorities: The air carriers warn all shippers that express traffic, both U. S. Government and commercial, is so heavy that no guarantee can be given that any shipment will depart on any particular plane unless it enjoys U. S. priority. Otherwise it will depart, in relation to other shipments, in the order received at the international airport used, subject to wartime limitations. Pick-up service without extra charge is available for all international air express, except shipments routed through American Export Airlines. For shipments forwarded via Pan American Airways, a "Shipper's Letter of Instructions" is prepared and accompanies shipment to local REA office, where the PAA Airwaybill is prepared. (On cargoes to be shipped via American Export Airlines, Inc., shippers should contact "Shipper's Service," Room 922, 25 Broadway, New York. HAnover 2-9144.)

International air carriers whose schedules and rates are included here are indicated by the letter following the symbol for the airport

AIRLINE SYMBOLS

A—American Air Lines.
B—Braniff Airways
C—Colonial Air Lines.
E—American Export Airlines.
EA—Expreso Aero Inter-Americano
K—KLM-Royal Dutch Air Lines.
NE—Northeast Airlines.
NW—Northwest Airlines
P—Pan American Airways System and affiliates.
T—Trans-Canada Air Lines.
U—United Air Lines
W—Western Air Lines.

Destination	U. S. Gateway & Airline	RATES (See Note) Per Lb.	RATES (See Note) Per $100 Value	Depart	Mail per ½ Oz.
NOTE: Per pound rate shown in this column is based on the average package weighing 25 lbs., i.e.: 1 lb. package from New York to Ontario would cost $1 or 25 lbs. $4. Average cost per lb.; 16¢. . . . Valuation rates are only due if consignments are shipped with declared value. . . . **American Airlines** offers International Airfreight Service on shipments over 25 pounds between its gateway points and Monterrey and Mexico City. Four classes of rates have been established. For further information, contact American Airlines.					
* British Overseas Airways Corp. carries from Foynes, Ireland to destinations in England, Scotland, and Wales.					
† Canadian air express is carried on the same basis as air express within the U. S.: $50 declared value free; excess charged at 10 cents per $100 or fraction thereof.					
LATIN AMERICAN LINES					
Antigua, B. W. I.	Mia P	.64	.32	Sa	.10
"	No P	.96	.32	Su	.10
"	Bro P	1.13	.43	Sa	.10
"	Lgs P	1.73	.43	F	.10
Antilla, Cuba	Mia P	.24	.15	Dly	.08
Antofagasta, Chile	Mia P	1.26	.43	Su,M,W,F,Sa	.20
"	No P	1.34	.43	Su,M,W,F,Sa	.20
"	Bro P	1.34	.43	Su,T,Th,F,Sa	.20
"	Lgs P	1.95	.43	M,W,Th,F,Sa	.20
Aracaju, Brasil	Mia P	1.26	.43	Th,Sa	.20
"	No P	1.71	.43	W,F	.20
"	Bro P	1.71	.43	T,Th	.20
"	Lgs P	2.28	.58	M,W	.20
Arequipa, Peru	Mia P	1.23	.43	Dly	.15
"	No P	1.26	.43	Dly	.15
"	Bro P	1.26	.43	Dly	.15
"	Lgs P	1.93	.43	Dly	.15
Arica, Chile	Mia P	1.25	.43	Su,M,W,F,Sa	.20
"	No P	1.26	.43	Su,M,W,F,Sa	.20
"	Bro P	1.26	.43	Su,T,Th,F,Sa	.20
"	Lgs P	1.94	.43	M,W,Th,F,Sa	.20
Aruba, N. W. I.	— P	via C	urac	ao, N. W. I.	
"	Mia K	.71	.45	Dly	.10
Asuncion, Paraguay	Mia P	1.73	.43	Su,W	.20
"	No P	1.86	.43	Sa,T	.20
"	Bro P	1.86	.43	F,M	.20
"	Lgs P	2.43	.58	Th,Su	.20
Bahia, Brazil					
(*See Sao Salvador*)					
Balboa, Canal Zone	Mia P	.76	.32	Dly	.10
"	No P	.90	.32	Dly	.10
"	Bro P	.90	.32	Dly	.10
"	Lgs P	1.45	.43	Dly	.10
Baracoa, Cuba	Mia P	.28	.17	Dly	.15
Barcelona, Venezuela	Mia P	.85	.32	Dly	.15
"	No P	1.13	.43	Dly	.15
"	Bro P	1.17	.43	Dly	.15
"	Lgs P	1.78	.43	Dly	.15
Barranquilla, Colombia	Mia K	.85	.50	Tu Sa	.25
via Kingston	Mia P	.61	.32	Dly	.25
via Balboa	Bro P	1.03	.32	Dly	.25
"	No P	1.03	.32	Dly	.25
"	Lgs P	1.50	.43	Dly	.25

Destination	U.S. Gateway & Airline	RATES (See Note) Per Lb.	Per $100 Value	Depart	Mail per ½ Oz.
Bauru, Brazil	Mia P	1.58	.43	M,Sa	.20
"	No P	1.71	.43	Su,F	.20
"	Bro P	1.71	.43	Th,Sa	.20
"	Lgs P	2.28	.58	W,F	.20
Belem, Brazil	Mia P	1.13	.43	Dly	.20
"	No P	1.34	.43	Dly	.20
"	Bro P	1.34	.43	Dly	.20
"	Lgs P	1.95	.43	Dly	.20
Belo-Horizonte, Brazil	Mia P	1.65	.43	Su,W,F	.20
"	No P	2.13	.43	T,Th,Sa	.20
"	Bro P	2.13	.43	M,W,F	.20
"	Lgs P	2.00	.58	Su,T,Th	.20
Bonaire, N.W.I.	— P	via Curacao. N.W.I.			
"	Mia K	.71	.45	M,Tu,Th,F, Sa	.10
Buenos Aires, Argentina	Mia P	1.56	.43	Dly	.20
"	No P	1.70	.43	Dly	.20
"	Bro P	1.70	.43	Dly	.20
"	Lgs P	2.26	.58	Dly	.20
Cali, Col. via Balboa	Mia P	.89	.32	Dly	.25
"	No P	1.03	.32	Dly	.25
"	Bro P	1.03	.32	Dly	.25
"	Lgs P	1.59	.43	Dly	.25
Camaguey, Cuba	Mia P	.26	.17	Thrice Dly	.08
"	Mia K	.20	.25	Dly	.08
Campeche, Mexico	Mia P	.41	.17	Dly	.08
"	No P	.41	.17	Dly	.08
"	Bro P	.51	.32	Dly	.08
"	Lgs P	1.00	.32	Dly	.08
Campo Grande, Brazil	Mia P	1.48	.43	Mo,W,Sa	.20
"	No P	1.61	.43	Su,T,F	.20
"	Bro P	1.61	.43	M,Th,Sa	.20
"	Lgs P	2.18	.43	Su,W,F	.20
Canavieiras, Brazil	Mia P	1.33	.43	Th,Sa	.20
"	No P	1.81	.43	W,F	.20
"	Bro P	1.81	.43	T,Th	.20
"	Lgs P	2.38	.58	M,W	.20
Caracas, Venezuela (*See La Guaira*)					
Caravellas, Brazil	Mia P	1.36	.43	T,W	.20
"	No P	1.85	.43	M,T	.20
"	Bro P	1.85	.43	Su,M	.20
"	Lgs P	2.41	.58	Su,S	.20
Cayenne, Fr. Guiana	Mia P	1.02	.32	Dly	.15
"	No P	1.26	.43	Dly	.15
"	Bro P	1.26	.43	Dly	.15
"	Lgs P	1.91	.43	Dly	.15
Cayo Mambi, Cuba	Mia P	.26	.17	Dly	.08
Chetumal, Mexico	Mia P	.55	.32	M,W,Sa	.08
"	No P	.55	.32	M,W,Sa	.08
"	Bro P	.55	.32	Su,T,Th	.08
"	Lgs P	1.04	.32	M,W,Sa	.08
Chiclayo, Peru	Mia P	1.11	.43	Dly	.15
"	No P	1.19	.43	Dly	.15
"	Bro P	1.19	.43	Dly	.15
"	Lgs P	1.81	.43	Dly	.15
Cienfuegos, Cuba	Mia P	.20	.15	Dly	.08
C. del Carmen, Mexico	Mia P	.48	.17	Dly	.08
"	No P	.48	.17	Dly	.08
"	Bro P	.47	.32	Dly	.08
"	Lgs P	.94	.32	Dly	.08
Ciudad Trujillo, D. R.	Mia P	.45	.17	Thrice Dly	.10
"	Mia K	.98	.50	Su	.10
Ciudad Victoria, Tamps.	Dl B	.30	.17	Dly	.08
"	Fv B	.30	.17	Dly	.08
"	Lo B	.16	.15	Dly	.08
"	Sa B	.23	.17	Dly	.08
Cochabamba, Bolivia	Mia P	1.26	.43	M,W,Sa	.20
"	No P	1.35	.43	M,W,Sa	.20
"	Bro P	1.35	.43	Su,T,F	.20
"	Lgs P	1.95	.43	M,Th,Sa	.20
Concepcion, Bolivia	Mia P	1.31	.43	Sa	.20
"	No P	1.45	.43	Sa	.20
"	Bro P	1.45	.43	F	.20
"	Lgs P	2.03	.43	Th	.20
Cordoba, Argentina	Mia P	1.49	.43	Dly	.20
"	No P	1.63	.43	Dly	.20
"	Bro P	1.63	.43	Dly	.20
"	Lgs P	2.19	.43	Dly	.20

Destination	U.S. Gateway & Airline	RATES (See Note) Per Lb.	Per $100 Value	Depart	Mail per ½ Oz.
Coro, Venezuela	Mia P	.74	.32	Dly	.15
"	No P	1.07	.43	Dly	.15
"	Bro P	1.11	.43	Dly	.15
"	Lgs P	1.69	.43	Dly	.15
Corumba, Brazil	Mia P	1.41	.43	M,Sa	.20
"	No P	1.56	.43	Su,F	.20
"	Bro P	1.56	.43	Th,Sa	.20
"	Lgs P	2.13	.43	W,F	.20
Cristobal, Canal Zone	Mia P	.76	.32	Dly	.10
"	No P	.92	.32	Dly	.10
"	Bro P	.92	.32	Dly	.10
"	Lgs P	1.46	.43	Dly	.10
Cuenca, Ecuador	Mia P	1.06	.32	Su,W,F	.15
"	No P	1.15	.43	Su,W,F	.15
"	Bro P	1.15	.43	T,Th,Sa	.15
"	Lgs P	1.76	.43	M,W,F	.15
Curacao, N.W.I.	Mia P	.73	.32	Dly	.10
"	No P	.93	.32	Dly	.10
"	Bro P	1.11	.43	Dly	.10
"	Lgs P	1.73	.43	Dly	.10
"	Mia K	.73	.45	Dly	.10
Curityba, Brazil	Mia P	1.60	.43	Su,M,W	.20
"	No P	2.00	.43	Su,Sa,T	.20
"	Bro P	2.00	.43	F,Sa,M	.20
"	Lgs P	2.58	.58	Th,F,Su	.20
David, Panama	Mia P	.81	.32	Dly	.10
"	No P	.85	.32	Dly	.10
"	Bro P	.85	.32	Dly	.10
"	Lgs P	1.38	.43	Dly	.10
Esmeraldas, Ecuador	Mia P	.99	.32	M	.15
"	No P	1.11	.43	M	.15
"	Bro P	1.11	.43	Su	.15
"	Lgs P	1.71	.43	Sa	.15
Florianopolis, Brazil	Mia P	1.63	.43	Sa	.20
"	No P	2.11	.43	F	.20
"	Bro P	2.11	.43	Th	.20
"	Lgs P	2.68	.58	W	.20
Fort de France, Martinique	Mia P	.71	.32	F,Sa	.10
"	No P	1.00	.32	Su,F	.10
"	Bro P	1.16	.43	Th,Sa	.10
"	Lgs P	1.78	.43	W,F	.10
Fortaleza, Brazil (Ceara)	Mia P	1.23	.43	M,T,W,Th,Sa	.20
"	No P	1.54	.43	Su,M,T,W,F	.20
"	Bro P	1.54	.43	Su,M,T,Th, Sa	.20
"	Lgs P	2.10	.43	Su,M,W,F,Sa	.20
Georgetown, British Guiana	Mia P	.90	.32	Su,F,Sa	.15
"	No P	1.24	.43	Th,F,Sa	.15
"	Bro P	1.24	.43	W,Th,F	.15
"	Lgs P	1.88	.43	T,W,Th	.15
Guadalajara, Mexico	Bro P	.43	.17	Dly	.08
"	Lgs P	.59	.32	Dly	.08
Guantanamo, Cuba	Mia P	.28	.17	Dly	.08
Guatemala City, Gua.	Mia P	.59	.32	Dly	.10
"	No P	.53	.32	Twice Dly	.10
"	Bro P	.53	.32	Dly	.10
"	Lgs P	1.08	.43	Dly	.10
Guayaquil, Ecuador	Mia P	1.04	.32	Dly	.15
"	No P	1.15	.43	Dly	.15
"	Bro P	1.15	.43	Dly	.15
"	Lgs P	1.75	.43	Dly	.15
Havana, Cuba	Mia P	.20	.15	Thrice Dly	.08
"	MiaEA	.20	.18	Twice Dly	.08
Hermosillo, Mexico	Lgs P	.24	.15	Dly	.08
Iguassu Falls, Brazil	Mia P	1.69	.43	W,Su	.20
"	No P	1.91	.43	T,Sa	.20
"	Bro P	1.91	.43	M,F	.20
"	Lgs P	2.48	.58	Su,Th	.20
Ixtepec, Mexico	Mia P	.76	.32	M,T,W,Th, F,Su	.08
"	No P	.76	.32	Su,T,W,Th, F,M	.08
"	Bro P	.41	.17	Su,T,W,Th, F,M	.08
"	Lgs P	.89	.32	Su,T,W,Th, Sa,M	.08

Destination	U. S. Gateway & Airline	RATES (See Note) Per Lb.	Per $100 Value	Depart	Mail per ½ Oz.
Joao Passos (Cabadello)	Mia P	1.25	.43	.....	.20
"	No P	1.64	.43	.....	.20
"	Bro P	1.64	.43	.....	.20
"	Lgs P	2.20	.43	.....	.20
Kingston, Jamaica	Mia P	.39	.17	Dly	.10
"	Mia K	.35	.35	M,Tu	.15
La Guaira, Venezuela	Mia P	.75	.32	Dly	.15
"	Mia K	.75	.45	Dly	.10
"	No P	1.08	.43	Dly	.15
"	Bro P	1.15	.43	Dly	.15
"	Lgs P	1.75	.43	Dly	.15
La Paz, Bolivia	Mia P	1.25	.43	M,T,W,Th,Sa	.20
"	No P	1.30	.43	M,T,W,Th,Sa	.20
"	Bro P	1.30	.43	Su,M,T,W,F	.20
"	Lgs P	1.95	.43	Su,M,T,Th,Sa	.20
Lima, Peru	Mia P	1.18	.43	Dly	.15
"	No P	1.24	.43	Dly	.15
"	Bro P	1.24	.43	Dly	.15
"	Lgs P	1.88	.43	Dly	.15
Loja, Ecuador	Mia P	1.08	.43	W,Su,F	.15
"	No P	1.17	.43	W,Su,F	.15
"	Bro P	1.17	.43	T,Th,Sa	.15
"	Lgs P	1.78	.43	M,W,F	.15
Maceio, Brazil	Mia P	1.26	.43	M,T,Th,Sa	.20
"	No P	1.68	.43	Su,M,W,F	.20
"	Bro P	1.68	.43	Su,T,Th,Sa	.20
"	Lgs P	2.24	.43	M,W,F,Sa	.20
Managua, Nicaragua	Mia P	.76	.32	Dly	.10
"	No P	.71	.32	Twice Dly	.10
"	Bro P	.71	.32	Dly	.10
"	Lgs P	1.22	.43	Dly	.10
Manaos, Brazil	Mia P	1.24	.43	W,Su,Sa	.20
"	No P	1.56	.43	T,F,Sa	.20
"	Bro P	1.56	.43	M,Th,F	.20
"	Lgs P	2.13	.43	Su,W,Th	.20
Manta, Ecuador	Mia P	1.03	.32	W,F	.15
"	No P	1.14	.43	W,F	.15
"	Bro P	1.14	.43	T,Th	.15
"	Lgs P	1.74	.43	M,W	.15
Manzanillo, Cuba	Mia P	.26	.17	Dly	.08
Maracaibo, Venezuela	Mia P	.69	.32	Dly	.15
"	Mia K	.73	.45	Dly	.15
"	No P	1.06	.43	Dly	.15
"	Bro P	1.08	.43	Dly	.15
"	Lgs P	1.66	.43	Dly	.15
Maturin, Venezuela	Mia P	.89	.32	Dly	.15
"	No P	1.17	.43	Dly	.15
"	Bro P	1.19	.43	Dly	.15
"	Lgs P	1.80	.43	Dly	.15
Mazatlan, Mexico	Bro P	.57	.32	Dly	.08
"	Lgs P	.45	.17	Dly	.08
Medellin, Colombia	Mia P	1.06	.32	Dly	.25
"	No P	1.10	.43	M,T,F,Sa	.25
"	Bro P	1.10	.43	Su,M,Th,F	.25
"	Lgs P	1.65	.43	Su,W,Th,Sa	.25
Mendoza, Argentina	Mia P	1.41	.43	Su,M,W,F,Sa	.20
"	No P	1.55	.43	Su,M,W,F,Sa	.20
"	Bro P	1.55	.43	Su,T,Th,F,Sa	.20
"	Lgs P	2.11	.43	M,W,Th,F,Sa	.20
Merida, Mexico	Mia P	.37	.17	Dly	.08
"	No P	.37	.17	Twice Dly	.08
"	Bro P	.55	.32	Dly	.08
"	Lgs P	1.04	.32	Dly	.08
"	Dl B	.56	.32	Dly	.08
"	Fv B	.56	.32	Dly	.08
"	Lo B	.42	.32	Dly	.08
"	Sa B	.49	.32	Dly	.08
Mexicali, Mexico	Lgs P	.20	.15	Dly	.08
Mexico City, Mexico	Mia P	.64	.32	Dly	.08
"	No P	.64	.32	Dly	.08
"	Dl B	.40	.17	Dly	.08
"	Bro P	.26	.17	Thrice Dly	.08
"	Lgs A	.67	.17	Dly	.08
"	Lgs P	.67	.32	Dly	.08
"	Lo B	.26	.17	Dly	.08
"	Fv B	.40	.17	Dly	.08
"	Fv A	.40	.17	Dly	.08
"	Eo A	.42	.17	Dly	.08

Destination	U. S. Gateway & Airline	RATES (See Note) Per Lb.	Per $100 Value	Depart	Mail per ½ Oz.
Mexico City, Mex. *Cont.*	Sa A	.33	.17	Dly	.10
"	Sa B	.33	.17	Dly	.10
Minatitlan, Mexico	Mia P	.53	.32	Dly	.10
"	No P	.53	.32	Dly	.10
"	Bro P	.39	.17	Dly	.08
"	Lgs P	.86	.32	Dly	.08
Monterrey, Mexico	Fv A	.27	.17	Dly	.08
"	Fv B	.27	.17	Dly	.08
"	Dl B	.27	.17	Dly	.08
"	Eo A	.34	.17	Dly	.08
"	Lgs A	.59	.17	Dly	.08
"	Lo B	.13	.15	Dly	.08
"	Sa A	.20	.15	Dly	.08
"	Sa B	.20	.15	Dly	.08
Montevideo, Uruguay	Mia P	1.60	.43	M,W,F,Su	.20
"	No P	1.74	.43	Su,T,Th,Sa	.20
"	Bro P	1.74	.43	M,W,S,F	.20
"	Lgs P	2.30	.58	Su,T,F,Th	.20
Mossoro, Brazil	Mia P	1.24	.43	.....	.20
"	No P	1.56	.43	.....	.20
"	Bro P	1.56	.43	.....	.20
"	Lgs P	2.13	.43	.....	.20
Nassau, Bahamas	Mia P	.20	.15	Dly ex Sa	.10
Natal, Brasil	Mia P	1.25	.43	M,T,Th,Sa	.20
"	No P	1.61	.43	Su,M,W,F	.20
"	Bro P	1.61	.43	Su,T,Th,Sa	.20
"	Lgs P	2.18	.43	M,W,F,Sa	.20
Nuevo Laredo, Mexico	Dl B	.22	.17	Dly	.08
"	Fv B	.22	.17	Dly	.08
"	Sa B	.15	.15	Dly	.08
"	Lo B	.08	.05	Dly	.08
Oaxaca, Mexico	Mia P	.73	.32	M,W,Sa	.08
"	No P	.73	.32	M,W,Sa	.08
"	Bro P	.35	.17	Su,T,Th	.08
"	Lgs P	.81	.32	M,W,Sa	.08
Oruro, Bolivia	Mia P	1.26	.43	M,T,W,Th,Sa	.20
"	No P	1.33	.43	M,T,W,Th,Sa	.20
"	Bro P	1.33	.43	Su,M,T,W,F	.20
"	Lgs P	1.95	.43	Su,M,T,Th,Sa	.20
Panama City, Panama	Mia P	.76	.32	Dly	.10
"	No P	.90	.32	Dly	.10
"	Bro P	.90	.32	Dly	.10
"	Lgs P	1.45	.43	Dly	.10
Para, Brasil (*See Belem*)					
Paramaribo, Sur	Mia P	.97	.32	Dly	.15
"	Mia K	1.14	.60	Su,Th	.15
"	No P	1.25	.43	Dly	.15
"	Bro P	1.25	.43	Dly	.15
"	Lgs P	1.90	.43	Dly	.15
Parnahyba, Brasil	Mia P	1.21	.43	W	.20
"	No P	1.48	.43	T	.20
"	Bro P	1.48	.43	M	.20
"	Lgs P	2.04	.43	S	.20
Point a Pitre, Guadeloupe	Mia P	.66	.32	Sa	.15
"	No P	.98	.32	Su	.15
"	Bro P	1.14	.43	Sa	.15
"	Lgs P	1.74	.43	F	.15
Port au Prince, Haiti	Mia P	.37	.17	Thrice Dly	.08
"	Mia K	.39	.35	Su,W,Th,F,Sa	.08
Port of Spain, Trinidad	Mia P	.79	.32	Dly	.15
"	Mia K	.91	.55	Su,W	.15
"	No P	1.20	.43	Dly	.15
"	Bro P	1.20	.43	Dly	.15
"	Lgs P	1.81	.43	Dly	.15
Porto Alegre, Brazil	Mia P	1.70	.43	Su,M,W,F,Sa	.20
"	No P	2.19	.43	Su,T,Th,F,Sa	.20
"	Bro P	2.19	.43	M,W,Th,F,Sa	.20
"	Lgs P	2.75	.58	Su,T,W,Th,F	.20
Preston, Cuba	Mia P	.24	.15	Dly	.08
Puebla, Puebla	Dl B	.41	.17	Dly	.08
"	Fu B	.41	.17	Dly	.08
"	Lo B	.27	.17	Dly	.08
"	Sa B	.34	.17	Dly	.08
Puerto Suarez, Bolivia	Mia P	1.41	.43	Sa	.20
"	No P	1.56	.43	Sa	.20
"	Bro P	1.56	.43	F	.20
"	Lgs P	2.13	.43	Th	.20

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Quito, Ecuador	Mia P	.97	.32	Dly	.15
"	No P	1.09	.43	Dly	.15
"	Bro P	1.09	.43	Dly	.15
"	Lgs P	1.68	.43	Dly	.15
Recife (Pernambuco), Brazil	Mia P	1.26	.43	M,T,Th,Sa	.20
"	No P	1.65	.43	Su,M,W,F	.20
"	Bro P	1.65	.43	Su,T,Th,Sa	.20
"	Lgs P	2.21	.43	M,W,F,Sa	.20
Rio de Janeiro	Mia P	1.50	.43	Su,M,W,F,Sa	.20
"	No P	1.98	.43	Su,T,Th,F,Sa	.20
"	Bro P	1.98	.43	M,W,Th,F,Sa	.20
"	Lgs P	2.54	.58	Su,T,W,Th,F	.20
Robore, Bolivia	Mia P	1.38	.43	Sa	.20
"	No P	1.51	.43	Sa	.20
"	Bro P	1.51	.43	F	.20
"	Lgs P	2.08	.43	Th	.20
Salinas, Ecuador	Mia P	1.05	.32	W,F	.15
"	No P	1.15	.43	W,F	.15
"	Bro P	1.15	.43	T, Th	.15
"	Lgs P	1.75	.43	M,W	.15
Salta, Argentina	Mia P	1.30	.43	T,Th,Sa	.20
"	No P	1.45	.43	T,Th,Sa	.20
"	Bro P	1.45	.43	M,W,F	.20
"	Lgs P	2.08	.43	Su,T,Th	.20
San Ignacio, Bolivia	Mia P	1.33	.43	Sa	.20
"	No P	1.48	.43	Sa	.20
"	Bro P	1.48	.43	F	.20
"	Lgs P	2.04	.43	Th	.20
San Jose, Bolivia	Mia P	1.35	.43	Sa	.20
"	No P	1.50	.43	Sa	.20
"	Bro P	1.50	.43	F	.20
"	Lgs P	2.08	.43	Th	.20
San Jose, Costa Rica	Mia P	.83	.32	Dly	.10
"	No P	.76	.32	Twice Dly	.10
"	Bro P	.76	.32	Dly	.10
"	Lgs P	1.31	.43	Dly	.10
San Juan, Puerto Rico	Mia P	.53	.32	Thrice Dly	.08
San Salvador, El Salvador	Mia P	.64	.32	Dly	.10
"	No P	.61	.32	Twice Dly	.10
"	Bro P	.61	.32	Dly	.10
"	Lgs P	1.14	.43	Dly	.10
Santa Cruz, Bolivia	Mia P	1.28	.43	M,W,Sa	.20
"	No P	1.43	.43	M,W,Sa	.20
"	Bro P	1.43	.43	Su,T,F	.20
"	Lgs P	1.99	.43	M,Th,Sa	.20
Santiago, Chile	Mia P	1.38	.43	Su,M,W,F,Sa	.20
"	No P	1.51	.43	Su,M,W,F,Sa	.20
"	Bro P	1.51	.43	Su,T,Th,F,Sa	.20
"	Lgs P	2.08	.43	M,W,Th,F,Sa	.20
Santiago, Cuba	Mia P	.26	.17	Dly	.08
Sao Luis, Brasil	Mia P	1.19	.43	M,T,Th,Sa	.20
"	No P	1.43	.43	Su,M,W,F	.20
"	Bro P	1.43	.43	Su,T,Th,Sa	.20
"	Lgs P	1.99	.43	W,F,Sa,M	.20
Sao Paolo, Brazil	Mia P	1.55	.43	Su,M,W,F,Sa	.20
"	No P	2.04	.43	Su,T,Th,F,Sa	.20
"	Bro P	2.04	.43	M,W,Th,F,Sa	.20
"	Lgs P	2.60	.58	Su,T,W,Th,F	.20
Sao Salvador, Brasil (Bahia)	Mia P	1.28	.43	M,T,W,Th,Sa	.20
"	No P	1.76	.43	Su,M,T,W,F	.20
"	Bro P	1.76	.43	Su,M,T,Th,Sa	.20
"	Lgs P	2.33	.53	Su,M,W,F,Sa	.20
St. Martin, N.W.I.	.....	1.20	.58	Su	.10
St. Thomas, V. I.	Mia P	.57	.32	Sa	.08
"	No P	.90	.32	Su	.08
"	Bro P	1.10	.43	Sa	.08
"	Lgs P	1.68	.43	F	.08
Talara, Peru	Mia P	1.06	.43	Dly	.15
"	No P	1.17	.43	Dly	.15
"	Bro P	1.17	.43	Dly	.15
"	Lgs P	1.79	.43	Dly	.15
Tampico, Mexico	Bro P	.20	.15	Dly	.08
"	Lgs P	.81	.32	Dly	.08

Destination	U.S. Gateway & Airline	RATES (See Note) Per Lb.	Per $100 Value	Depart	Mail per ½ Oz.
Tapachula, Mexico	Mia P	.74	.32	Dly	.08
"	No P	.74	.32	Dly	.08
"	Bro P	.53	.32	Dly	.08
"	Lgs P	1.02	.32	Dly	.08
Tegucigalpa, Honduras	Mia P	.69	.32	Dly	.10
"	No P	.68	.32	Twice Dly	.10
"	Bro P	.68	.32	Dly	.10
"	Lgs P	1.18	.43	Dly	.10
Tres Lagaos, Brasil	Mia P	1.53	.43	.....	.20
"	No P	1.66	.43	.....	.20
"	Bro P	1.66	.43	.....	.20
"	Lgs P	2.23	.43	.....	.20
Tucuman, Argentina	Mia P	1.34	.43	T,Th,Sa	.20
"	No P	1.49	.43	T,Th,Sa	.20
"	Bro P	1.49	.43	M,W,F	.20
"	Lgs P	2.05	.43	T,Th,Su	.20
Turbo, Colombia	Mia P	1.06	.32	Dly	.25
"	No P	1.10	.43	T,F	.25
"	Bro P	1.10	.43	M,T,Th	.25
"	Lgs P	1.65	.43	W,Th	.25
Tuxpan, Mexico	Bro P	.20	.15	Dly	.08
"	Lgs P	.83	.32	Dly	.08
Tuxtla,Gutierrez,Mexico	Mia P	.81	.32	M,W,Sa	.08
"	No P	.81	.32	M,W,Sa	.08
"	Bro P	.45	.17	Su,T,Th	.08
"	Lgs P	.93	.32	M,W,Sa	.08
Uyuni, Bolivia	Mia P	1.26	.43	T,Th	.20
"	No P	1.38	.43	T,Th	.20
"	Bro P	1.38	.43	M,W	.20
"	Lgs P	1.95	.43	Su,Th	.20
Veracruz, Mexico	Mia P	.57	.32	Dly	.08
"	No P	.57	.32	Dly	.08
"	Bro P	.33	.17	Dly	.08
"	Lgs P	.79	.32	Dly	.08
"	Dl B	.42	.32	Dly	.08
"	Fv B	.42	.32	Dly	.08
"	Lo B	.28	.17	Dly	.08
"	Sa B	.35	.17	Dly	.08
Victoria, Brasil	Mia P	1.41	.43	Th,Sa	.20
"	No P	1.90	.43	W,F	.20
"	Bro P	1.90	.43	T,Th	.20
"	Lgs P	2.46	.58	M,W	.20
Villahermosa, Mexico	Mia P	.49	.32	Dly	.08
"	No P	.49	.32	Dly	.08
"	Bro P	.43	.17	Dly	.08
"	Lgs P	.90	.32	Dly	.08

NOTE: Charges Collect and C. O. D. Services have been resumed to Pan American Airways Airports in the following countries: Canal Zone—Costa Rica—Cuba—Dominican Republic—El Salvador—Guatemala—Haiti—Honduras—Panama Republic—Puerto Rico—Surinam—Trinidad—Venezuela—Virgin Islands; also charges collect (no C. O. D.) service to Nicaragua.

ATLANTIC LINES

Bolama, Portuguese Guinea, Africa	Nyk P	2.66	.43	Fortnightly	.50
Botwood Newfoundland	Nyk P	.81	.32	Su,W,F	.15
Botwood, Newfoundland	Nyk E	.81	.32	Thrice wk May-Oct.	.15
Dakar, Senegal, Africa	.....	2.36	.45	Fortnightly	.45
England via Foynes*	Nyk E	(Rates	on	Application)	.30
" *	Nyk P	(Rates	on	Application)	.30
Foynes, Eire via Botwood	Nyk P	1.78	.43	Su,W,F	.30
" " via Botwood or Direct	Nyk E	1.78	.43	Thrice wk May-Oct.	.30
Hamilton, Bermuda	Nyk P	.55	.17	M,T	.10
Horta, Azores	Nyk P	1.70	.32	T	.30
Lisbon, Portugal	Nyk P	2.00	.43	T	.30
Monrovia (Fisherman's Lake), Liberia	Nyk P	2.67	.43	Alt. Th	.50
Scotland via Foynes*	Nyk E	(Rates	on	Application)	.30
" *	Nyk P	(Rates	on	Application)	.30
Shediac, N.B.	Nyk P	.51	.17	Su,W,F	.08
Sweden, via Foynes	Nyk E	(Rates	on	Application)	.30
Wales via Foynes*	Nyk E	(Rates	on	Application)	.30
" *	Nyk P	(Rates	on	Application)	.30

Destination	U. S. Gateway & Airline	RATES (See Note) Per Lb.	Per $100 Value	Depart	Mail per Oz.
ALASKA LINES					
Aniak Alaska	Ste P	1.08	.32	Th	.08
Bethel "	Ste P	1.11	.32	Th	.08
Burwash Landing "	Ste P	.72	.32	Dly	.08
Fairbanks "	Ste P	.90	.32	Dly	.08
Flat "	Ste P	1.05	.32	Th	.08
Galena "	Ste P	1.00	.32	Su,Tu,Th	.08
Juneau "	Ste P	.56	.17	Dly	.08
Lake Minchumina "	Ste P	.95	.32	Th	.08
McGrath "	Ste P	1.00	.32	Th	.08
Moses Point "	Ste P	1.07	.32	Su,Tu,Th	.08
Nome "	Ste P	1.11	.32	Su,Tu,Th	.08
Tanacross "	Ste P	.81	.32	Dly	.08
Tanana "	Ste P	.95	.32	Su,Th,Tu	.08
Whitehorse, Canada	Ste P	.66	.32	Dly	.08
CANADIAN LINES					
Calgary, Alb.	Nyk T	1.02	†	Dly	.08
Edmonton, Alb.	Nyk T	1.06	†	Dly	.08
Halifax, N. S.	Nyk T	.31	†	Dly	.08
Lethbridge, Alb.	Nyk T	.88	†	Dly	.08
"	CubW	.04	†	Dly	.08
London, Ont.	Nyk T	.22	†	Dly	.08
Moncton, N. B.	BbNE	.06	†	Dly	.08
Montreal, Que.	Nyk C	.12	†	Dly	.08
"	Nyk T	.12	†	Dly	.08
"	Jg NE	.12	†	Dly	.08
North Bay, Ont.	Nyk T	.27	†	Dly	.08
Ottawa, Ont.	Nyk T	.18	†	Dly	.08
Regina, Sask.	Nyk T	.80	†	Dly	.08
St. John, N. B.	Nyk T	.31	†	Dly	.08
St. Johns, N. F.	Nyk T	.58	†	Dly	.08
Sydney, N. S.	Nyk T	.36	†	Dly	.08
Toronto, Ont.	Nyk A	.16	†	Dly	.08
"	Nyk T	.16	†	Dly	.08
Vancouver, B. C.	Ste U	.04	†	Dly	.08
"	Nyk T	.96	†	Dly	.08
Windsor, Ont.	Nyk A	.20	†	Dly	.08
"	Cg A	.12	†	Dly	.08
"	Nyk T	.20	†	Dly	.08
Winnipeg, Man.	GfNW	.04	†	Dly	.08
"	Nyk T	.60	†	Dly	.08

Scale of Rates Generally in Use in American Marine Insurance Markets for Mail and Air Shipments

Schedule Dated October 22, 1945

A—Registered Mail, excluding Registered Air Mail and Air Express:

Non-negotiable securities (warranted full value declared for insurance)—37½% of Cargo Rates. Securities (except as provided above), documents and similar interest —75% of Cargo Rates.

Currency including jewelry, precious stones, precious metals, etc.—100% of Cargo Rates.

B—Registered Air Mail and/or Air Express and/or other shipments by air: Western Hemisphere (excluding shipments between points in Continental United States and/or Canada:

	All classes of property
Sendings between points in Western Hemisphere	2½c%
U. S. or Canada to or from:	
1. British Isles, Eire, Sweden, Holland, Belgium, France, Portugal, Spain, Italy, Switzerland, Iceland, Greenland	2½c%
2. Africa	5c%
3. Arabia, Palestine, Syria, Cyprus, Turkey, Greece, Iran, Iraq	5c%
4. Afghanistan, India, Ceylon	7½c%
5. Chungking	⅛c%
6. Australasia	5c%

C—Ordinary Parcel Post, Government Insured Parcel Post, Registered Post, Ordinary Mail (Excluding Air Mail)

(A) United States or Canada to from Australasia, Hawaiian and other Pacific Islands —Transpacific Cargo Rate.

(B) U. S. to from United Kingdom, Eire, Portugal, Spain, Africa, Near East, Far East, Newfoundland, Iceland, Greenland, Bermuda—Cargo Schedule Rate to from New York but with respect to shipments to or from Spain under policies endorsed with the airborne clause, the Lisbon rate will be charged plus an additional charge of 2½c% because of the possibility that shipments of valuables may go forward to or from interior points by Air.

(C) U. S. West of Rockies to from Costa Rica, Panama, Panama Canal Zone, Colombia, Ecuador, Peru, Bolivia and Chile—Cargo Schedule Rate for Pacific voyages to from San Francisco.

(D) U. S. West of Rockies to from Venezuela, Guianas, Brazil, Paraguay, Uruguay, Argentina—Cargo Schedule Rate via Panama to from San Francisco.

(E) U. S. East of Rockies to from Costa Rica, Panama, Panama Canal Zone, So. America, West Indies (except Bermuda)—Schedule Rate to from U. S. Gulf.

(F) *U. S. West of Rockies to from Mexico—25% of Schedule Cargo Rate for Pacific voyages to from San Francisco with a minimum of 2½c%.
*U. S. East of Rockies to from Mexico—25% of Schedule Cargo Rate to from United States Gulf with a minimum of 2½c%.

(G) U. S. to from British Honduras, Guatemala, Republic of Honduras, El Salvador and Nicaragua—Cargo Schedule Rate for voyages between U. S. Gulf and East Coast Central America.

* Note: Reduced percentage provided assured agrees to pay this percentage on all shipments; otherwise individual shipments on Facultative Basis.
Cargo Schedule Rate for Pacific voyages to from San Francisco
Cargo Schedule Rate to from United States Gulf
Rates in this Section are not subject to revision, either upward or downward, should be actual route of the shipments become known.

D—Express (Excluding Air Express)—Charge Cargo War Risk Schedule Rates.

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